

ILLUSTRATED CATALOGUE

AND

PRICE-LIST

OF

MINERALS

Fine Cabinet Specimens, Systematic Collections, Laboratory
Minerals, Books and Mineralogical Supplies,
Crystals, Gems, and Polished Stones.

COMPLETE MINERAL CATALOGUE

186 pages, with 40 splendid Photo-engravings. Contains a Systematic Classification, giving Name, Composition and Form of all known Minerals, with a Supplement completing the work to date; A new Metallic Classification of Minerals, showing the various Natural Combinations of the Metals; Alphabetical Index of Mineral Names; Lists giving the Specimen Values of Minerals, etc., etc.

Prices, postpaid: Paper bound, 25 cents; Cloth,
50 cents; Calf, interleaved, \$1.00.

DR. A. E. FOOTE,

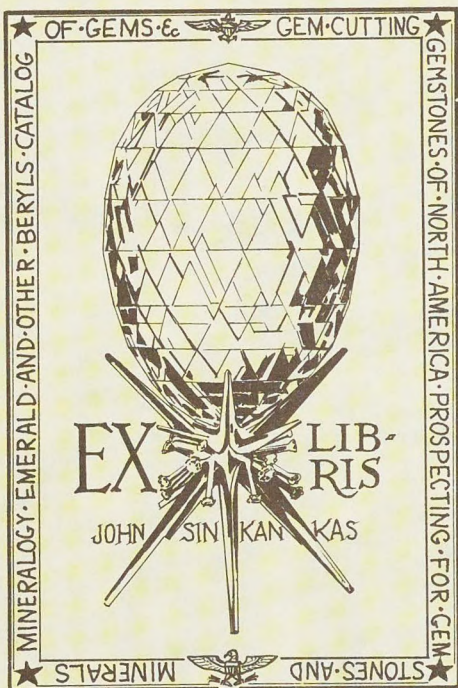
1317 Arch St., Philadelphia, Pa., U. S. A.

Established 1876.

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Cat. 1/17/80

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A Word as to Our Business.

We supply institutions, teachers, students, and professional men with type specimens for study and reference. In filling these orders we draw from an enormous stock of minerals, which has been steadily increasing in volume and scope since the nucleus—Dr. Foote's private cabinet—was exhibited at St. Louis in 1875. The expansion of this great collection has been along lines indicated by the demand for good teaching material. The other important department secures, through correspondence and personal collecting, newly discovered species, or unique and choice examples of the familiar minerals, which are in demand among museums and private collectors. The separate department, dealing in old and new scientific and medical books, is continued.

In the following pages are catalogued collections and single specimens. Detailed descriptions of elementary and advanced collections are given. The various lists have been rearranged to keep pace with new discoveries in mineralogy, and it is hoped that the best educational requirements are met to even a greater extent than before.

The engravings are one of the many new features introduced, having been prepared especially for this volume under our direct supervision, in the hope that artistic and scientifically exact illustrations might be obtained. In the work of compilation care has been taken to give a just and accurate account of the material offered for sale.

To Purchasers.

PRICES throughout this catalogue will be strictly adhered to. We can, however, quote on cheaper material, the price being lowered at the expense of quality. Terms are net cash. Our plan of marking specimens with lowest price has given general satisfaction, and will be continued.

PAYMENT should accompany orders from those unknown to us, unless business references are given, or the shipment is made to an institution. Money will be cheerfully refunded on any item returned in good condition within ten days of date of delivery.

APPROVAL. Specimens will be sent for examination to institutions or others known to us or furnishing references. The cost of returning rejected specimens and risk of loss or breakage, must be borne by purchaser. Collections will be sent only on positive order.

PACKING and boxing is done at our expense and in the best possible manner by experienced assistants. Every precaution is taken to insure safe transit, but our responsibility ends with delivery to the common carrier. Shipments are made to all parts of the world by freight, express or post, cost of carriage to be borne by purchaser.

VISITORS TO PHILADELPHIA will find our store, at 1317 Arch Street, most convenient. It is located in the centre of the city, and is but three minutes' walk from Broad Street Station (Pennsylvania Railroad).

Minerals Bought and Exchanged.

We buy in quantity, paying in cash or specimens, any minerals not already well represented in our stock. Either valuable cabinet specimens or the less expensive ones for educational collections. The latter must be good illustrative types and first-class in every respect.

Small mail samples must accompany all offers.

I.

NEW MINERALS.

Brief Mention of Recent Discoveries and Other Interesting Minerals Offered for Sale in Fine Cabinet Specimens.

To curators of museums, teachers, students, private collectors and others interested, this descriptive list is issued.

Our facilities for securing rare and often valuable specimens continue to be unequalled. The numerous long collecting trips personally made to many countries, and a wide correspondence, have established lasting connections with collectors at many of the principal localities of the world. Frequently, arrangements are made to receive all the best specimens of certain finds. These direct consignments, constantly coming in, afford a rare opportunity to students and lovers of minerals to pick from fresh material. Where selection is left to us, the tastes and desires of the purchaser are followed as closely as possible. Instruction as to preferred size, price, etc., will materially assist in filling orders.

Prices are for good cabinet specimens, and in many cases have been much reduced. Small pieces for amateurs and beginners can be had at prices lower than the lowest quoted, while the highest price does not always refer to the best of the kind on hand.

A complete list of the minerals we have for sale may be found in the *Alphabetical Index and Price List*. Announcements of new and important accessions to stock are published from time to time, and will be mailed free to any address.

New England.

Chrysoberyl, Greenwood, Me. The accompanying engraving fails to do justice to the perfection and symmetrical outline of these neat crystals. They are orthorhombic twins (pseudo-hexagonal), green in color, of thin, tabular habit, and show radial, feather-like striations. (See Dana, p. 229, Fig. 5.) No such Chrysoberyls as these have been known in America or Europe for years, and similar ones, when found, brought high prices. Crystals in white feldspar matrix. 50c. to \$2.50



Herderite, Auburn, Me. The small specimens found in Saxony, prior to 1825, by which this exceedingly rare mineral was long known, are entirely eclipsed by the few splendid crystals recently found at this locality. Several of good size,

pale brown-yellow and transparent, show bright planes and sharp angles, with perfect terminations. \$3.00 to \$7.00

Beryllonite, Stoneham, Me. Another rare beryllium phosphate. Semi-transparent crystals. 50c. to \$1.25

Bertrandite, Auburn, Me. Small crystals, associated with clear, bluish Apatites. \$1.00 to \$3.00

Pollucite. Small pieces. 25c. to 75c.

Diaspore, Chester, Mass. A find of this rather rare mineral, at the Chester Emery Mines, is a revelation to collectors, who have hitherto known only massive pieces or an occasional crystal. The new crystals are transparent, with beautiful violet and amethystine tints; clear-cut and brilliant as gems, the terminal planes especially lustrous. They are long, tabular in habit, and occur grouped on Emery. The few first found were sold immediately at a high figure. Since then we received practically all the best crystallizations saved in blasting. None have been found for over a year, and the mine dumps were thoroughly searched. Our stock includes some fine groups of 2 to 4 in. diameter. \$2.50 to \$10.00

Margarite, Chester, Mass. Selected and very pretty pink specimens of this micaceous mineral, showing the crystallization. 35c. to \$2.50

Epidote, Gray, Huntington, Mass. A new color for this familiar green mineral. Sharp, bright and well-formed crystals in matrix. 50c. to \$3.00

Tourmaline, Haddam, Conn. We have just received a select lot of these wonderful gem crystals. Often the slender prism is a clear green, shading off toward one extremity into a delicate pink. Their exquisite coloring and clearness give them a very dainty appearance.

25c. to \$10.00

New York.

Quartz, Herkimer Co. Few minerals are better known and give more universal satisfaction than these cheap crystals. Hard, absolutely clear and flawless, with the brilliant faceting of a precious stone, they deserve the popular name, "Little Falls Diamonds."



Our stock has recently been enriched by the purchase of a large collection made at the locality many years ago. Among the better crystals are some containing bits of Anthracite, as shown in the illustration. Occasionally these black particles rise and fall in the liquid cavities. Crystals, showing moving bubbles,

\$1.00 to \$5.00

Prices for selected crystals, either grouped or single, $\frac{1}{2}$ to $1\frac{1}{2}$ in. diameter, 25c. to \$5.00. Smaller at 10c. per dozen, up to 15c. each.

Chondrodite, Tilly Foster Mines, Brewsters. This mine has been permanently closed, and the splendid crystallizations formerly found, are no longer obtainable. We are fortunate in having lately secured a number of excellent specimens from a gentleman who has probably collected more really fine specimens than any other visitor at this famous locality. Groups of bright, gem-like crystals of rich red color are few but fine, at \$1.00 to \$3.50 each.

Clinochlore, Tilly Foster. Sharp edged, hexagonal crystals, sometimes grouped with Chondrodite. \$1.00 to \$2.00

Serpentine, crystallized, Tilly Foster. Masses of distinct cubic crystallizations, generally considered pseudomorphous. 50c. to \$1.50

Magnetite, Port Henry. A variety of interesting modifications, illustrating various forms between the octahedron and its half form, the tetrahedron. Complete and well-formed crystals. 10c. to 50c.

Fluorite, Muscolonge Lake. Rough crystals, from 3 to 6 in. square, of translucent, sea-green color. 50c. to \$4.00

Octahedral cleavages, 1 to 2 in. 15c. to 75c.

Wollastonite, Diana, Lewis Co. Large crystals in Calcite. 50c. to \$4.00

New Jersey.

Franklin Furnace, the Mecca of American mineralogists, has, during the last twenty years, been as closely watched as the older regions of Cornwall and the Tyrol. Very little has been found in later years, and the old-time specimens were absorbed by the larger collections. Outside of these, the best specimens were to be found in an old collection, made at the locality. We purchased it, and are able to offer the following:

Franklinite. Octahedral crystals, often modified by dodecahedral planes, $\frac{1}{2}$ to 2 in. in Calcite matrix. \$1.00 to \$7.50

Rhodonite var. Fowlerite. Well-defined crystals in Calcite. Some of the smaller ones are bright, of rich color. 50c. to \$10.00

Gahnite var. Dysluite. Groups of perfect octahedral crystals. \$1.50 to \$6.00

Axinite, yellow. Prettily mixed with the pink Rhodonite. Distinct crystals. 50c. to \$5.00

Chalcophanite, crystallized (drusy). Botryoidal surfaces. Finest found. 50c. to \$3.00

Caswellite. Foliated crystalline masses. 25c. to \$1.50

Calamine. Splendid masses of white crystals. 50c. to \$4.00

Jeffersonite. Groups of large dull crystals. 75c. to \$5.00

Willemite, transparent crystals in Bementite. \$2.00 to \$10.00

Willemite, var. Troostite. Regular crystals, 2 to 3 in. long. \$1.00 to \$7.50

Zincite. Massive foliated, deep red. 25c. to \$1.50

Nicolite, with Fluorite. 50c. to \$5.00

Thaumasite, Paterson. A mineral having a most remarkable chemical composition (silicate, carbonate and sulphate of calcium). Heretofore quite rare, but lately found in abundance at this locality. Specimens showing distinct crystals, 50c. to \$2.00. Pure compact, crystalline masses. 15c. to 75c.

Apophyllite, Heulandite, Natrolite and other Paterson minerals in good specimens. 15c. to \$2.00

Pectolite, Guttenberg. Slender white crystals, often terminated, associated with rich green Prehnite. 25c. to \$1.00

Brown Tourmaline, Hamburg. Good-sized crystals of light and dark shades. Their bright planes contrast well with the white Calcite.

50c. to \$4.00

Pennsylvania.

Several old collections were recently purchased, among them one made at the Wheatley mines, near Phoenixville, in the early sixties. It yielded—

Pyromorphite. Unusually fine green crystallizations. 50c. to \$6.00

Anglesite. Lustrous and perfect crystals on dark Galena matrix. \$1.00 to \$4.00

Cerussite. Slender white crystals in cavities. 50c. to \$2.00

Pyrite, French Creek. Curiously modified and distorted cubes, in a variety of forms, two of which are here shown. This is one of the prettiest and most interesting examples of this common species. 10c. to 50c.



Chalcopyrite, French Creek. Hollowed brass-yellow tetrahedrons, grouped with bright Pyrite on Magnetite. 25c. to \$3.00

Rutile, Chester Co. Fine red crystals of 1 to 2 in. diameter, showing the geniculation, or complex twinning, in oddly arranged striations. 50c. to \$6.00

Lanthanite, Saucon Valley. Exceedingly rare, minute crystals. \$1.00 to \$3.00

Quartz, var. *Amethyst*, Delaware Co. Excellent crystals, doubly terminated; the ends of deeper color than the centres, giving a pretty effect. 50c. to \$3.00

Millerite, Gap Mine. Velvety plates of compactly arranged acicular crystals. 25c. to \$2.00

Williamsite, Lancaster Co. Beautiful translucent green masses 2 to 4 in. diameter. Polished, 75c. to \$2.00. Rough, 25c. to 75c.

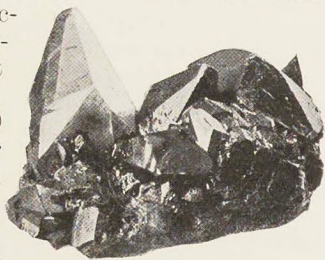
Roseite, Chester Co. A crystallized hydromica of recent discovery. Selected specimens. 50c. to \$1.50

Missouri.

We have been receiving shipments from the zinc region in the southwestern part of the State for several years, and have made numerous trips to the mines. The following selections from a large stock are offered at low prices:

Calcite, Joplin. Superb honey-yellow scalenohedrons of the transparent quality which yields the doubly-refracting spar. With a high natural polish, sharp-angled and perfect in outline, they are the finest yellow Calcites known. 3 to 8 in. diameter. Price varies with size, 25c. to \$12.50

Equally brilliant and perfect smaller crystals in groups. Some are naturally coated with asphaltum, as shown in the illustration. (One crystal has been cleaned.)



25c. to \$2.00

A rare form at this locality is a pale purplish scalenohedron, terminated by a lower scalenohedron. Perfect quality. \$1.50 to \$4.00

"Giant Phantoms." Single scalenohedral crystal, showing an interior of delicate amethystine color, with spear-shaped Marcasite crystals, regularly arranged in dazzling bands, giving a shadow or phantom effect in the interior. 12 to 18 in. diameter, \$10.00 to \$15.00. The same, 2 to 6 in., 25c. to \$2.00.

Calcite var. Iceland Spar. Rhombic cleavages, broken from the centres of the "phantoms." The bright bands of included Marcasite give a further beauty to their yellow and amethystine color. It is a lovely and novel variation in this familiar mineral, which pleases every collector. 1 to 4 in. 5c. to \$1.50

Galena. Bright cubes and cubo-octahedrons, 1 to 3 in. Regular and sharp-angled. Some on pearl spar, dotted with exquisite little ruby blendes. Very showy. 25c. to \$2.00

Asphaltum-coated Galena. A curious occurrence of bitumen or asphalt, on large octahedrons of Galena; the latter are mounted on Sphalerite crystals measuring 3 to 5 in. across. Another form is an elongated cubo-octahedron, 2 to 3 in. long. 25c. to \$3.00

Sphalerite. Our stock embraces many choice examples—either the darker shades known as "black jack" or the rich "ruby blende" in most attractive groups. 15c. to \$2.00

Chalcopyrite on Pearl Spar. Wonderfully showy and cheap. It is a good representation of both species, the iridescent tetrahedrons scattered over the pearl-colored Dolomite making a pretty combination. The Chalcopyrites are small, but as delicate and perfect as models. Pieces 2 to 6 in. across. 15c. to \$1.00

Leadhillite. Found some years ago in the now abandoned Beercellar Mine, near Granby. The crystals are white to pale green, pseudo-hexagonal and perfectly formed, $\frac{1}{8}$ to $\frac{3}{8}$ in. diameter, on matrix. 50c. to \$5.00

Leadhillite Pseudomorph after Galena. Described by W. M. Foote, *Am. Jour. of Sc.*, Aug., 1895. The Galena cubes, found in a chert rock, are changed to a gray amorphous Leadhillite, in crusts and hollow forms. The interior is sometimes lined with drusy crystals of Leadhillite, unaltered Galena occasionally being present.

Gangue specimens and detached cubes. 25c. to \$3.00

Arkansas.

Since the first collecting trips made in 1874-75 to this region, and the large sales of Quartz, Brookite and Rutile which followed, our stock has been constantly replenished by the specimens secured in work done expressly for us at the localities. The purchase of the famous Lawrence collection and other smaller ones gave some remarkable specimens.

Quartz var. Rock Crystal, Hot Springs. Undoubtedly we secured the largest stock of these splendid crystallizations in the world. Of the regulation type, that shown in Plate IX is a good example. Prices for single crystals and groups 2 to 6 in. across, 10c. to \$5.00. Several magnificent museum groups, 10 to 15 in., \$10.00 to \$25.00. One specimen about 2 ft. square, \$50.00.

Flat crystals and other distorted shapes, illustrated in Plate I.

25c. to \$7.50

Twin crystals.

\$1.00 to \$5.00

Chloritic Quartz. We have a nice assortment of these green "phantoms," owing their odd appearance to the regular inclusion of a moss-like chloritic mineral. Also similar inclusions of Albite crystals.

Monticellite, Magnet Cove. Distinct crystals of about $\frac{1}{2}$ to 1 inch diameter, in Calcite matrix. 50c. to \$4.00
25c. to \$3.00

Dysanallyte. Bright and perfect crystals in matrix, 50c. to \$2.00. Detached cubes, cubo-octahedrons and octahedrons. 5c. to 35c.

Wavellite. Handsome specimens, showing green radiations on a flat matrix. 10c. to \$2.00

Vesuvianite. Symmetrical but rough crystals of 2 to 4 inches diameter. Excellent for illustration in crystallography. \$2.00 to \$5.00

Rutile. The accompanying figure pictures the geniculated form of twinning, which these specimens illustrate so well. We have complete sixlings and eightlings in stock to-day which are better than any previously found.



Prices, 25c. to \$1.00
Brookite. In single detached crystals of perfect orthorhombic form and brilliant planes. Also pieces of white feldspar with the clear-cut, black crystals in fine contrast.

25c. to \$2.00
Rutile Paramorph after Brookite. Excellent representatives of this curious alteration.

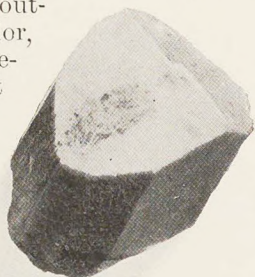
10c. to \$1.00
Manganpectolite. A new Zeolite, containing 4.25 per cent. of manganese oxide. Cleavages, 50c. to \$1.50

Pseudoleucite. An altered Leucite. Large, rough crystals in matrix. 25c. to \$1.50

Magnetite var. Lodestone. Masses possessing strong polarity, picking up tacks, needles, keys, and extra large nails. 10c. to \$2.00

Colorado.

Microcline var. Amazon-stone. Probably no discovery has ever interested collectors more than the finding of this superb Feldspar at Pike's Peak, in 1875. The unusual size and perfect outline of the crystals, combined with the fine green color, rendered them far superior to the specimens previously found in Russia and sold at exorbitant prices. Numerous trips were made to the locality and much costly work done. Of the specimens secured, most of the best were long ago scattered among the museums and collectors throughout the world. We still have several very fine groups and single crystals, of 4 to 12 inches diameter, at \$5.00 to \$35.00, including a Baveno twin. Smaller at 10c. to \$4.00

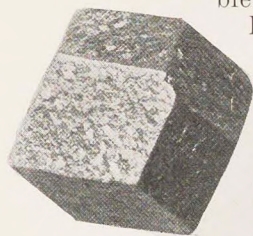


Manebach Twins, from Florrisant.

\$1.00 to \$3.00

Smoky Quartz, Pike's Peak. Crystals 2 to 6 inches long. 10c. to \$1.50

Garnet, Salida. These dodecahedral Almandites are invaluable for crystallographic illustration on account of their size and the remarkable symmetry and perfection of form. We secured a large lot by working the mine in which they were found. Although we have sold quantities, we can still offer complete and unbruised crystals, $1\frac{1}{2}$ to 4 inches diameter, at 25c. to \$4.00 each.



Broken crystals, showing the outline well. 10c. to \$2.00

Astrophyllite. A titaniferous mica, from El Paso Co. Long bladed crystals, of bronze color, in matrix. 15c. to \$1.50

Calaverite. Specimens from the famous Cripple Creek Mines, some showing crystallization. \$1.00 to \$4.00

Calcite Pseudomorph after Hanksite. An interesting alteration, in flat hexagonal crystals, 1 to $1\frac{1}{2}$ in. 25c. to \$1.00

Phenacite. In crystals, $\frac{1}{8}$ to $\frac{3}{8}$ in. diameter, both detached and on matrix. 10c. to \$3.00

Zircon, St. Peter's Dome. Gemmy little crystals, showing interesting modified habits. In gangue. 25c. to \$1.00

Bastnasite and Tysonite. Two rare cerium minerals, the former crystallized. 50c. to \$4.00

Orthoclase. In groups of fine crystals, 2 to 6 in. 10c. to \$2.00

New Mexico.

Endlichite, Hillsboro, near Lake Valley.—“The finest American mineral?” Probably two lead compounds, Wulfenite and Vanadinite, occupy a position near first place, in most answers to this common query. Clear Anglesites and Cerussites, and the rare but gorgeously colored Tasmanian Crocoites, are other examples of the lustrous crystallizations in which the salts of lead are found. And now from the same family comes another candidate for honors, everything but size being claimed for it. A dazzling lustre, well called adamantine; clear transparent quality; exquisite regularity and definiteness of outline; color shading through yellow, red and brown, and occurring in an amazing number of types. The species was first found at Lake Valley in 1886, in crystals which did not compare with the present ones, and attracted little attention. It contains about equal portions of vanadate and arsenate of lead, with chloride of lead; occurs in the brownish-yellow rounded forms and the pale yellow hexagonal prisms common to Mimetite, and again red and in hollowed crystals like Vanadinite, also occupying a position between these two in composition, the first an arsenate, the second a vanadate of lead. Two years ago a few specimens of small crystals were sent us from Hillsboro and quickly sold. In some recent prospecting done on the same property, crystals of unusual size and quality were found, resulting in our contract with the owners to buy the specimen output. Work was commenced and some wonderful crystallizations secured. They were found sparingly in seams of a siliceous sandstone, some on crystallized Calcite; often lying loosely in a puffy clay formed from the decomposition of the original matrix, leaving the crystals detached and imperfect. The “pay ore” was massive, yielding no crystalline mineral.

In Plate II are shown some of the types in which this most unique mineral occurred.

1. Transparent prisms of dazzling lustre and golden yellow color, $\frac{1}{8}$ to $\frac{1}{2}$ in. long, terminated by basal plane of equal brilliancy. Rarely attached to the solid rock.

2. Opaque straw-yellow perfect prisms, terminated by basal plane or pyramid, or both. In several specimens a surface of two or three square inches was covered with such crystals, averaging $\frac{3}{8}$ in. long. Generally detached, with one termination. (See central group and some single crystals in plate.)

3. Small but marvellously brilliant yellow crystals are doubly terminated, scattered thickly over flat limestone surfaces. Again this matrix is a dark-brown Jasper, as in the upper specimen illustrated.

4. Flat tabular prisms often doubly terminated, in solid masses. Varying shades of yellow, sometimes charmingly mottled with red.

5. The above in "fringed" crystals—*i. e.* the prismatic planes appear to extend beyond the basal plane in a hexagon of delicate capillary crystals, all standing parallel to the larger prism, leaving its basal plane as the floor of a miniature inclosure.

6. Masses of interwoven acicular crystals, red to yellow, terminated by pyramid and basal plane.

7. Red crystals, $\frac{3}{8}$ to $\frac{5}{8}$ in. long, terminated by pyramid and small basal plane, some in "skeleton" forms. Always detached.

8. Smaller slender prisms, dark reddish brown; of quite different aspect from the others, yet possessing the same perfection and brilliancy.

9. Specimen in lower left-hand corner of plate. Rather dark but translucent prisms of about $\frac{1}{8}$ in. : if anything, even more lustrous than the others. *The middle of the crystal yellow, the ends a decided red.* The latter consist of brilliant basal plane and dull pyramid. These are the gemmiest and at once the oddest and most beautiful small crystals of any known mineral.

To see actual specimens is to understand the impossibility of picturing them justly. Many collectors have already purchased a full series, and dealers have made large purchases from our stock. These specimens will soon be widely scattered and no longer obtainable, though our present prices indicate neither its great rarity nor our exclusive control of its sale.

Specimens of the finest quality of the various habits above described, $1\frac{1}{2}$ to 5 in. diameter. \$2.00 to \$9.00

Smaller groups, many of them making what are considered the finest microscopic mounts known,; also single crystals. 25c. to \$1.50

Descloizite, Socorro Co. In drusy masses of bright and distinct crystals. 50c. to \$3.00

Turquoise, Las Cruces. Choice gem material of the highly-prized sky-blue shade; veins and masses in Quartzite. 25c. to \$2.00. Paler shades, 10c. to 75c.

Smithsonite, Kelly. Rivaling the Grecian product in beauty of color and satiny lustre. Green tinted, botryoidal masses. 50c. to \$2.00

Meteoric Iron, Sacramento Mts. See IV, Meteorites.

Wulfenite, yellow, Organ Mts. Good-sized groups of tabular crystals, $\frac{1}{2}$ to 1 in. across. Varying in color from brown to yellow. 25c. to \$2.50

Garnet var. Grossularite, Jarilla Mts. Curiously striated, detached crystals. Perfect, $\frac{1}{2}$ to $\frac{3}{4}$ in. 10c. to 25c.

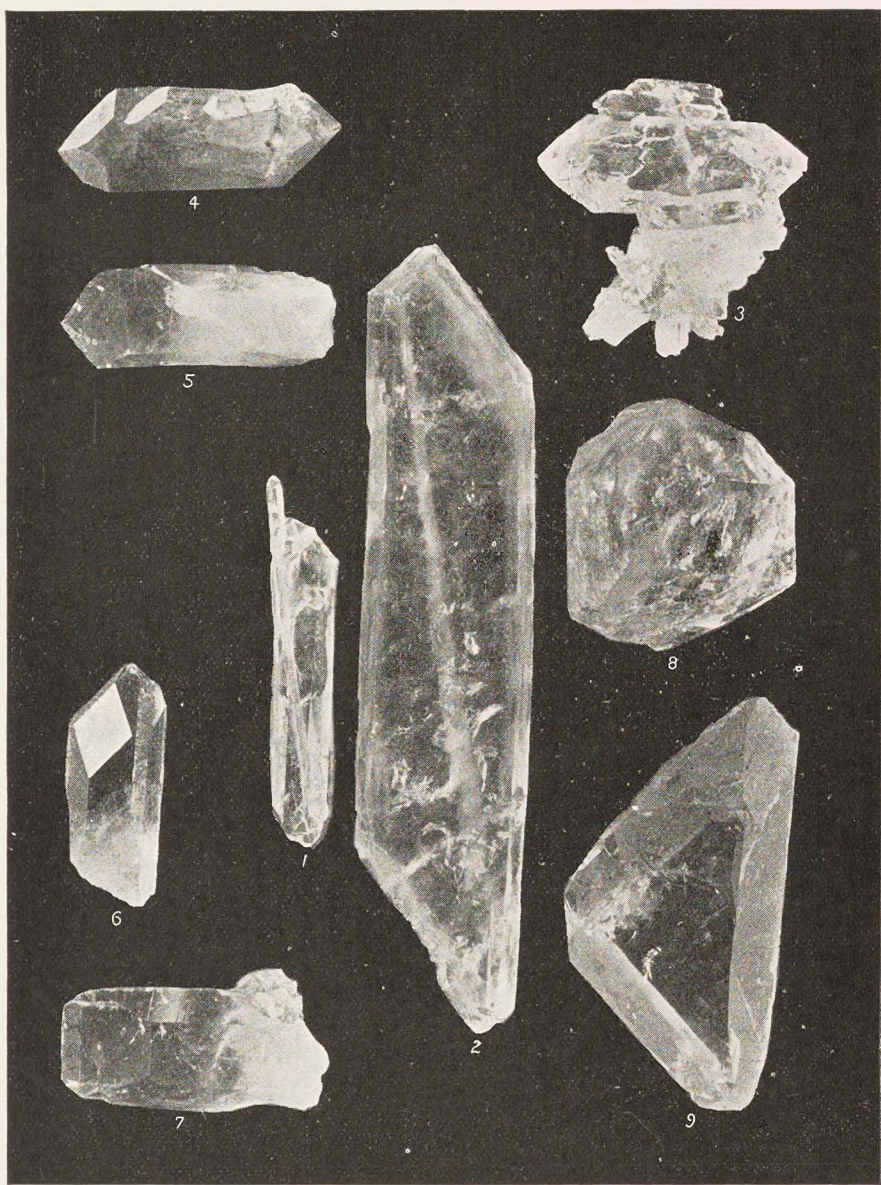


PLATE I.

Curious Modifications of Quartz var. Rock Crystal from near Hot Springs,
Arkansas.

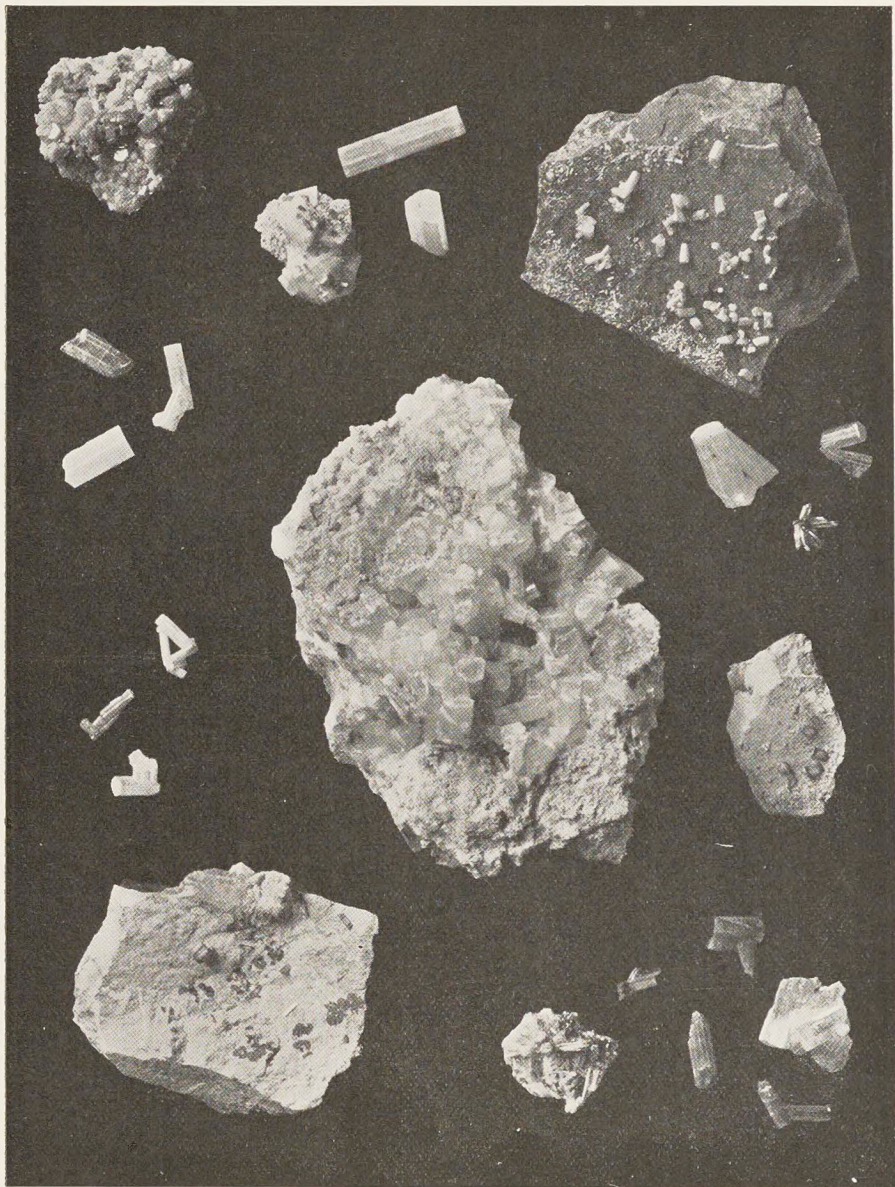


PLATE II.

Various forms of Endlichite, an Arsenate and Vanadate of Lead found at Hillsboro, near Lake Valley, Sierra County, New Mexico.

Limonite Pseudomorph after Pyrite, Jarilla Mts. Groups and single crystals. Bright and sharp octahedrons, modified by the pyritohedron. 15c. to \$1.00

Arizona.

Wulfenite, Red Cloud Mine. One of the most beautiful crystallizations in nature. Our illustration gives but the outline, with no hint of its high lustre and gorgeous orange-red color. We were the first to collect this mineral in any quantity, and obtained, by several visits to the mine, a stock of specimens that has since supplied more than one dealer. We still have a superb museum specimen at \$50.00, which shows crystals 1 in. across.

Crystals $\frac{1}{2}$ to 1 in., some on matrix. 25c. to \$5.00

Azurite, Copper Queen Mine. This locality is now known the world over by its splendid crystallizations. Our stock is large and prices low. Simple crystals possessing the brilliancy and rich color of Sapphires are scattered in pretty contrast over a light matrix. Also wheat-sheaf forms; stalactitic and drusy; agate-like structure; balls of "Chessylite," $\frac{3}{4}$ to 2 in. diameter (Morenci). 15c. to \$2.50

Malachite, Copper Queen. Exquisitely delicate tufts of slender crystals in cavities. Velvet surfaces. A few banded with Azurite, polished. 15c. to \$1.50

Cuprite, cubes and octahedrons, Copper Queen. Good crystals are fast becoming rare. Extra fine groups. \$1.00 to \$5.00

Cuprite var. Chalcotrichite. Another charming mineral from the Copper Queen. Cavities of the rock are filled with matted tufts of capillary crystals of rich red color and sparkling appearance. Finer than the old Cornish specimens and sold at half the price. 25c. to \$3.00

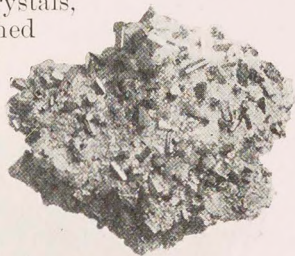
Diamondiferous Meteoric Iron, Canon Diablo. See IV, Meteorites.

Vanadinite, red. Yuma Co. A mineral famed for its beauty. None has been found in later years, and it is becoming rare. Specimens like the one illustrated, with doubly terminated crystals, clear-cut as gems and of rich color; also detached skeleton crystals. 25c. to \$9.00

Vanadinite, brown. Yavapai Co. Doubly terminated, barrel-shaped crystals on matrix. 25c. to \$5.00

Dumortierite. Blue masses. 25c. to \$2.00

Fasperized Wood. Chalcedony Park or Great Petrified Forest. This splendid petrification, with its shades of red and violet charmingly blended, is too well known for description. A special collecting trip to the



Forest brought us choice examples of trunks 20 in. diameter down to small sections of limbs.

Polished sections, showing the bark nicely. \$2.00 to \$25.00

Selected pieces, unpolished. 10c. to \$1.00

Calcite var. Stalactite, Copper Queen. We have an excellent stock of these attractive specimens. The delicate sea-green tint is due to the presence of copper; 3 to 9 in. long, prettily frosted, in coralloidal forms. 15c. to \$2.00

One large show specimen, 24 in. long, 8 in. thick at base, and gracefully tapering to point. Especially beautiful shape, pale, translucent green. \$15.00

Another of the "curtain" type, 33x14 in., pure white, with delicate veinings of green. \$20.00

California.

Lawsonite, Tiburon Peninsula. *Bull. Dept. Geol. Univ. Cal.*, May, 1895. Occurring in well-defined orthorhombic crystals, up to 1 in. and more in length, of varying habit. Long, squarish prisms; tabular crystals; twins, with feather-like striations; in cavities, small crystals of octahedral symmetry.



See illustration; also figures in original description. It is brittle and highly cleavable; hardness, 8; color, gray (resembling some Corundum); composition, $H_4CaAl_2Si_2O_{10}$, basic metasilicate of calcium and aluminium. In chemical character it presents an interesting analogy to Carpholite ($H_4MnAl_2Si_2O_{10}$), though it is a distinct and well-established species, both chemically and crystallographically.

We purchased all of the good crystallizations found, working over a quantity of the Margarite schist, in which it occurs, to obtain the few fine specimens offered for sale. The best, $1\frac{1}{2}$ to 4 in. \$2.50 to \$10.00

Less perfect but typical matrix specimens and single crystals.

25c. to \$1.50

Borax Lake Region. Several trips were personally made to this now famous locality, and connections were established which afforded us regularly for several years the best specimens found. These shipments continued until the final closing and abandoning of the mines. The various species are well represented in our stock, and, despite increasing rarity, are offered at low prices.

Hanksite. Crystals $\frac{1}{2}$ in. diameter, such as we retail at 25c. each, were sold in England, in 1887, for £1. A lot which was the result of several years saving includes several types: (1) Flat, tabular crystals, with pyramid and prominent basal plane; (2) with pyramid highly developed; (3) long prism and pyramid. Perfect and complete crystals, translucent, and as regular as models, $\frac{3}{8}$ to 1 in. 10c. to 75c.

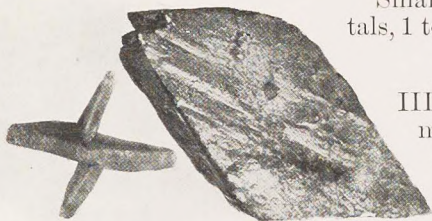
A few large groups of tabular crystals.

\$2.00 to \$7.00

Thenardite. Fine orthorhombic crystals, 2 to 6 in. long. Single and grouped. Their large size makes them useful for crystallographic demonstration.

25c. to \$4.00

Small twins (crosses) and simple crystals, 1 to 1½ in. 10c. to 25c.



Halite, Rock Salt. See Plate

III. Numerous distorted and abnormal forms of the cubo-octahedron are represented. The beauty and oddity of these transparent, sharp-angled crystals found for them a large sale. We still have selected

specimens, 1 to 2 in. long at 15c. to 50c.

It can be preserved with no more than ordinary precautions, being unusually impervious to dampness.

Halite, cubical. In groups of pink and pale yellow cubes, often hopper-shaped. They make cheap and showy case specimens. 2 to 8 in. diameter. 25c. to \$4.00

Halite, banded. An odd and pretty variety, composed of alternate layers of a pink, green, red and gray salt. 2 to 6 in. 15c. to 75c.

Northupite. W. M. Foote, *Am. Jour. Sc.*, Dec., 1895; J. H. Pratt, *Am. Jour. Sc.*, Aug., 1896. Carbonate of magnesium and sodium with sodium chloride, $\text{MgCO}_3 \cdot \text{Na}_2\text{CO}_3 \cdot \text{NaCl}$. (Pratt). The comparatively small find of this new species was purchased by us entire in 1895. The crystals vary in size from two millimeters to rarely a centimeter in diameter, and are regular and perfect. The octahedron is the only form observed. The triangular markings characteristic of diamond crystallization are not uncommon on Northupite crystals, together with a habit of parallel grouping. On breaking open a crystal or holding a small, translucent one to the light, there are plainly seen regularly arranged dark lines, due to inclusion of carbonaceous matter.



Complete crystals.

25c. to \$3.00

Broken crystals.

10c. to \$1.00

Pirssonite. J. H. Pratt, *Am. Jour. Sc.*, Aug., 1896. Hydrous carbonate of calcium and sodium, $\text{CaCO}_3 \cdot \text{Na}_2\text{CO}_3 \cdot 2\text{H}_2\text{O}$. Another exceedingly rare new species. Found only in small, loose orthorhombic crystals of a few millimeters diameter, generally complete, and in several distinct habits.

We have the only crystals offered for sale, but a few grammes having been found. 75c. to \$4.00

Native Antimony, crystallized. Near South Riverside. A few excellent specimens from a recently located mine. Glistening crystals of the pure metal, ¼ to ½ in. thick, are massed together with a yellow antimony oxide; where the latter is weathered away the rhombohedral symmetry is shown.

50c. to \$2.00

Metacinnabarite, Lake County. Black masses in barite. 25c. to 75c.

Colemanite, San Bernardino Co. We have the only large stock of this mineral in the world. In the lower part of Plate VI are shown a group and a detached crystal, the latter one of many habits assumed. It possesses a remarkable adamantine lustre, so bright as to prevent a good photographic reproduction of the crystal outline. It is a perfectly stable compound and a most beautiful example of the class of borates. Showy groups, 50c. to \$7.00. Single crystals, 15c. to \$1.00.

Tourmaline var. Rubellite, Pala, San Diego Co. Discovered in 1892. We were the first to offer it for sale, and now have over two tons of selected specimens. It is one of the handsomest minerals known, the delicate pink crystals radiating through a lilac Lepidolite rock, presenting a most charming combination of colors. As a showy cabinet specimen, or for ornaments, paper-weights, etc., it has few rivals. The quantity found places the price below any mineral of equal beauty. Museum specimens, 8 to 20 in., with large radiations of crystals, \$2.00 to \$10.00. Choice smaller pieces, with fine radiations, 2 to 6 in., 15c. to \$1.50.



Other American Localities.

"Opalized Wood" (*Opal var. Wood-opal*), Clover Creek, Lincoln Co., Idaho. Since the discovery of this wood two years ago, it has been sold largely as "the most perfect and beautiful petrification in existence," and the statement has never been seriously questioned. The single tree discovered was uncovered by blasting away the volcanic ash in which it was buried, thereby shattering and utterly ruining the greater part of it. The few solid branches saved were purchased by us. It appears to have been a finely-marked oak or similar species, the small cells, tissue, rings, radial lines, knots, bark and other signs of tree growth being shown with a perfection and minuteness of detail which is simply marvelous. All this is reproduced in a lustrous brown-yellow semi-opal, the various shades being occasionally contrasted with a rich and very dark opal at the centre. The panel inlaid on the cover of the *Complete Mineral Catalogue* gives but a poor idea of its appearance. The section illustrated in Plate IV is an average specimen. Prices are as low as have been asked for any of the inferior petrifications. Large show specimens, polished cross sections of the limb, showing bark, complete, 6 to 12 in. diameter, \$6.00 to \$25.00. Longitudinal sections; two 10x12 in. pieces cut from the same limb as panel, \$15.00 and \$30.00. Polished cross sections, complete, 2 to 5 in. diameter, \$2.00 to \$5.00.

Cubes and flat paper-weights, beveled and handsomely polished on all sides, two sizes, \$2.50 and \$3.50. Selected pieces, with high natural polish, showing structure, but not complete sections, 2 to 6 in. diameter, 25c. to \$1.50.

Garnet var. Almandite, Stickeen River, Alaska. These crystals are well known for their perfect symmetry and beauty. The dark red in the

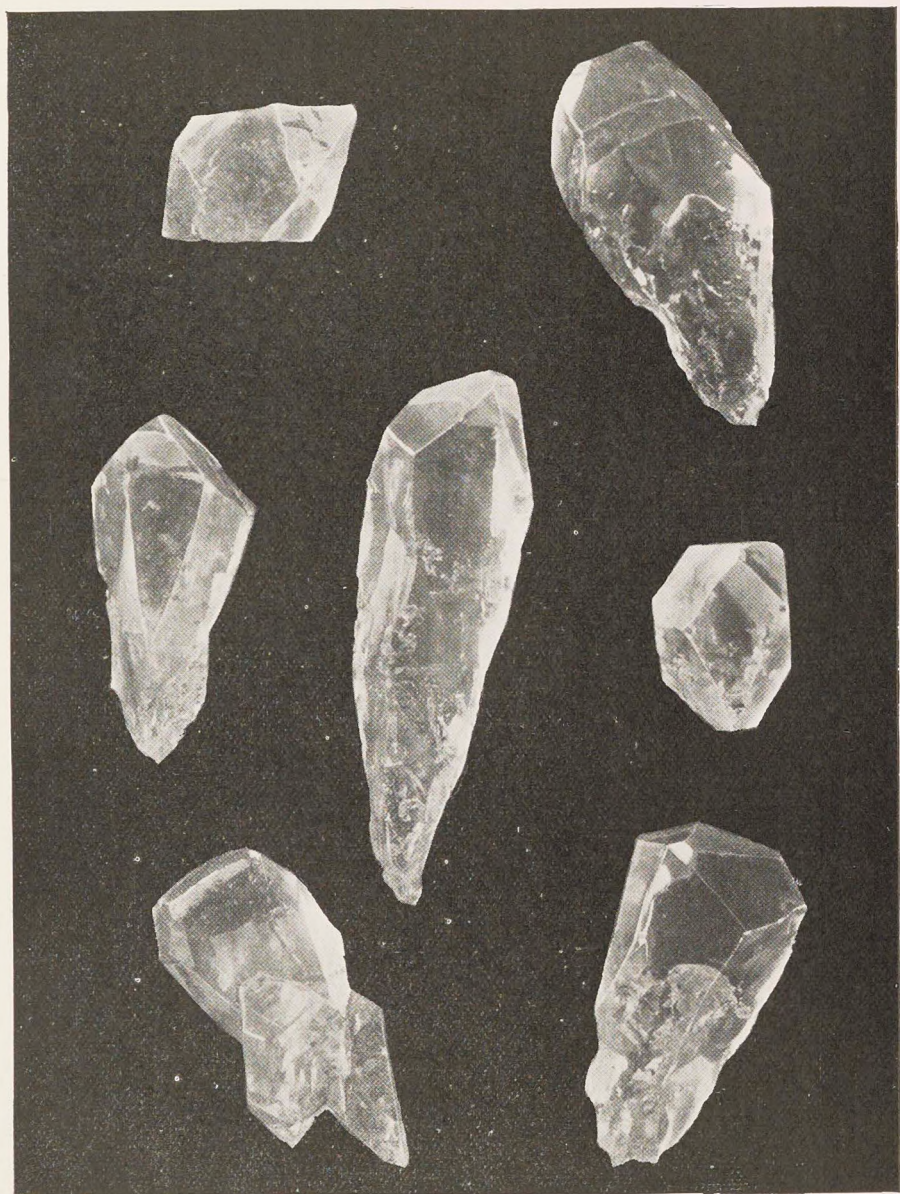


PLATE III.

Halite or Rock Salt from near Borax Lake, California.

Clear Crystals, showing puzzling Forms of the Cubo-octahedron, due to unequal development of certain Planes.



PLATE IV.

Polished Branch of Opalized Wood from Clover Creek,
Lincoln Co., Idaho.

Showing the replacement in minute detail, of Wood Cells, Fibre, and Structure, by a lustrous brown and yellow Semi-opal. It is the most perfect and beautiful Petrification yet discovered.

sombre setting of gray mica schist is most attractive. Matrix specimens, 50c. to \$5.00. Perfect detached crystals, $\frac{1}{2}$ to 1 in. diameter, 15c. to 50c.

Opal var. Common Green-opal, Waterville, Wash. Generally accepted as the handsomest and cheapest semi-opal known. A mottling of red through the translucent olive green adds much to its beauty. Polished sections showing the blending colors, 75c. to \$4.00. Selected rough specimens, with lustrous surfaces, 2 to 5 in., 25c. to \$2.00.

Topaz, Juab Co., Utah. The brilliancy of cut Topaz is equalled by nature's polish on the rough crystals. Some show pretty inclusions of minute Quartz crystals. We have a large stock of these common but pretty natural gems, and offer selected crystals of flawless quality at 5c. to 25c. each, according to size. Small crystals at 10c. per dozen. Matrix specimens, 25c. to \$1.00 each.



Giant Selenites, Wayne Co., Utah. Finely formed crystals of this transparent variety of Gypsum were found as much as four feet in length. We have one such valued at \$15.00. Transparent crystals, one to two feet long; clear, sharp-edged and bright.

Perfectly colorless and transparent cleavages 2 to 10 in. across. Very handsome. \$3.00 to \$10.00
5c. to \$1.00
Showing moving bubbles. 50c. to \$3.00

Model Selenites. Mahoning Co., Ohio. The adjective "model" is appropriate, as they are in reality perfect models of a simple and familiar combination of the monoclinic system. Their cheapness and unusual perfection make them in great demand for crystallographic study. They are generally transparent, often exhibiting the interior markings or "phantom."

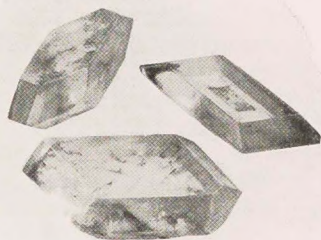
Perfect unscratched crystals, several types, as illustrated, $\frac{3}{4}$ to 2 in. long, 10c. to 50c. each

Bruised or slightly imperfect crystals, 10c. per dozen to 15c. each, according to size. 1 to 3 perfect crystals in clay matrix. 25c. to \$1.00

Martite, Millard Co., Utah. In groups of excellent crystals, 25c. to \$1.00

Orpiment, crystallized, Mercur, Utah. Matrix specimens, with distinct and fair-sized crystals. 15c. to \$1.25

Variscite and Wardite, near Camp Floyd, Utah. A new gem quality of green Variscite, forming the centre of pale yellow nodules, with a new



amorphous phosphate called Wardite. When polished it is one of the handsomest of ornamental stones. Sections showing both minerals, polished. \$1.00 to \$6.00

Thinolite, Pyramid Lake, Nevada. Large masses of distinct crystals $\frac{1}{2}$ to 1 in. long. 15c. to 75c.

Gay-Lussite, Ragtown Lake, Nevada. Fair sized crystals on matrix. 25c. to \$3.00

Moss Agate, Laramie Co., Wyoming. A pretty gray-blue with dark moss and tree-like markings. Rough pieces, 25c. to 75c.

Polished. 50c. to \$2.00

Rose Quartz, Custer, S. D. Translucent pieces of fine pink color, 25c. to 75c. Polished. 50c. to \$2.50

Stephanite, Lake Chelan District, Montana. From a new mine we have just received a large consignment of this rich silver ore, including some excellent crystals. They are of hexagonal aspect, quite brilliant, and prettily associated with Pyrargyrite and Galena on a white Calcite matrix. The best bring \$1.00 to \$5.00 each.



Marcasite Disks, near Sparta, Ill. An excellent example of radiated crystallization. Odd and quite pretty, being exactly the form of the "sand-dollar." 50c. to \$1.00

Beryl var. Emerald, Crabtree Mt., Mitchell Co., N. C. European specimens have always brought high prices. From this new locality, we offer rich green hexagonal crystals of the true Emerald shade, in white Feldspar, presenting a bright contrast of color. 25c. to \$1.25

Canada.

Molybdenite Crystals, Aldfield, Pontiac Co., Quebec. About ten years ago we received a few crystals which, though badly bruised, were quickly sold. Efforts to procure more failed, until a personal visit was made to the locality in 1894. For two months mining was carried on, dynamite being constantly required to remove the mass of rock overhanging the crystal-bearing vein. Many were destroyed, but in the end a number were saved which will rank always as valuable specimens. The work was abandoned when the last two weeks of labor resulted in uncovering but one crystal of any value, there being little prospect of finding more.

The crystals measured from $\frac{1}{2}$ to 2 and sometimes 3 inches in diameter, having the glistening metallic lustre and characteristic blue-black color. Nearly all were saved in the hard Pyroxene matrix, the faces and angles being preserved in all their original perfection. They are generally thick hexagonal tables, often brighter and better defined than the large crystals shown in Plate V. Extra fine case specimens are worth \$10.00 to \$20.00 each. Descriptions of several higher priced specimens furnished on application. Crystals have heretofore been exceedingly rare. A large stock of good, typical examples were secured and are offered at low prices.

Cabinet specimens; large cleavages or smaller crystals in matrix.

25c. to \$7.50



PLATE V.

Molybdenite.

Aldfield Township, Pontiac Co., Quebec, Canada.

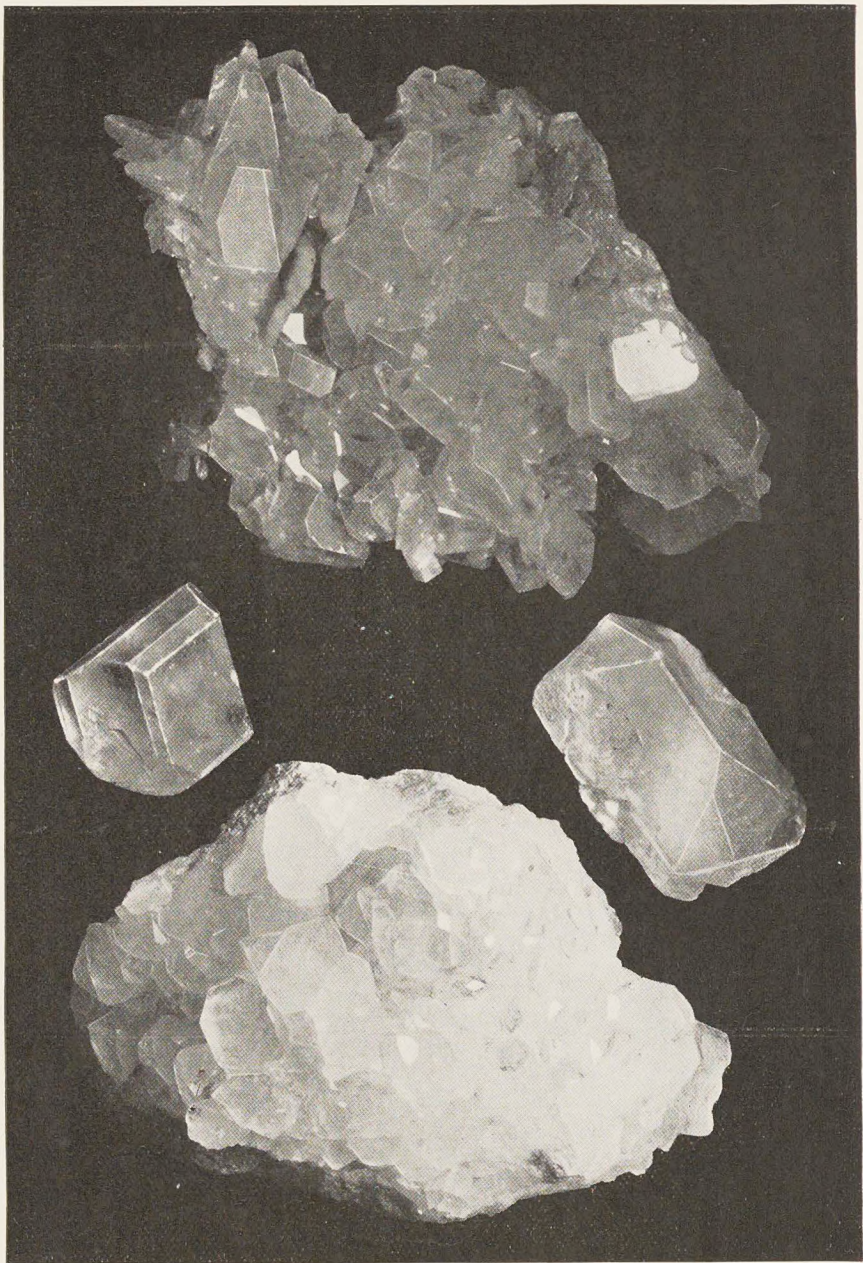


PLATE VI.

Sulphur. Cianciana, Sicily.

Colemanite, Calico Borate Deposit, San Bernardino Co., California.

Zircon, near Eganville, Renfrew Co., Ontario. The twin crystals were first brought to the attention of mineralogists in 1881 by Dr. Foote. Since then we have secured both twins and simple crystals in choice matrix specimens. 50c. to \$12.50

Apatite, near Eganville. Doubly terminated, sharp-edged hexagonal prisms, 2 to 6 in. long. 25c. to \$6.00

Cacoclasite, Wakefield, Quebec. A puzzling pseudomorphous mineral, well crystallized. 50c. to \$2.00

Perthite, "Sunstone." Perth, Ontario. A curious mixture of feldspars, having a pretty aventurine effect. 2 to 4 in. 25c. to 75c.

Fine polished pieces. 75c. to \$2.00

Sperrylite, Sudbury, Ontario. A new species, arsenide of platinum, being the only known natural chemical combination of platinum with an element. \$1.75 per gramme.

Pyrolusite, Tenneys Cape, Nova Scotia. Groups of brilliant black acicular crystals. 25c. to \$2.00

Labradorite, Pauls Island, Labrador. A familiar and beautiful ornamental stone. Fine polished pieces reflecting shades of red, green, blue and violet. 35c. to \$2.00

Klondike Gold. Locality is authentic.

Nuggets, various sizes, Bonanza Creek, \$1.00 to \$7.00

"Dust," in vials, El Dorado Creek, \$1.00, \$2.00 and \$3.00

Mexico.

Boléo, near Santa Rosalia, Lower California. A stay of several weeks in this locality in 1894, together with the further purchase of all the specimens collected from time to time by M. Cumenge which he had for sale, has given us a wonderful series of these beautiful and rare minerals. Few minerals have excited such general interest among collectors and scientists as the two new species, Boléite and Cumengéite. The former, though not common, is comparatively inexpensive, the latter rarer species costs more. Although the leading museums and collectors have purchased, we reprint the following, principally a translation of extracts from Messrs. Mallard and Cumenge's description, published in *Comptes Rendus*:

Boléite. Occurs in cubes and cubo-octahedrons, sometimes a centimeter or more in diameter. Cleavage, perfect. H.=3—3.25. G.=5.08. Color, indigo blue. Several analyses by M. Cumenge and others, give the following composition: Silver, 8.70; Copper, 14.95; Lead, 49; Chlorine, 19.50; Water, 4.35; Oxygen, 3.50. This gives us the formula $\text{PbCl}_2 + \text{CuOH}_2\text{O} + \frac{1}{3}\text{AgCl}$ or $3(\text{PbCl}(\text{HO})) + \text{AgCl}$.

Professor Groth gives to Percylite, the only old species resembling Boléite, the composition $\text{CuClHO} \cdot \text{PbClHO}$. The absence of silver in Percylite, which is uniformly present in Boléite, makes Boléite a distinct species. It exhibits some interesting figures when cleaved parallel to the



face of the cube. It would appear that it is not cubic, but pseudo-cubic, and belongs to the quadratic system.

Perfect loose crystals, 2 to 7 mm. diameter, bright, clear-cut, and of beautiful blue color, 5c. to \$2.00. A few larger, \$3.00 to \$5.00 each

Broken crystals one-third above prices.

Crystals on Bouglisite, Gypsum, clay, or Phosgenite and Atacamite matrix. Rare, 25c. to \$5.00

Cumengéite. Occurs ordinarily in octahedral crystals but a few millimeters in diameter, in a gangue of white clay. Usually modified.

The blue color is a little more violet than that of Boléite, and it has a bright adamantine lustre. Hardness is less than that of Boléite and more friable. G.—4.675. The composition, as determined by Messrs. Cumenge, Friedel and Fourment is Lead, 54.63; Copper, 16.77; Chlorine, 19.48; Water, 5; Oxygen, 4.12. This gives us the formula $PbCl_2 \cdot CuOH_2O$, differing from Boléite by the absence of $\frac{1}{3} AgCl$.



“Trillings.” These crystals, probably the most beautiful of any ever discovered, are exceedingly rare in the perfect specimens which show three points up, no

matter how they may be turned; imperfect crystals, which, however, show the trilling well, are not uncommon. They were at first supposed to be formed by the planting of the octahedral crystals on the faces of the cubic Boléite, but cross sections show the absence of Boléite as a central nucleus, as the bi-refracting portion is continued to the centre. In some cases the octahedrons are truncated. These latter were formerly supposed to be Boléite, but as we have all grades between the perfect octahedral pointed trilling and this form, they must be considered as Cumengéite.

Both species were found in small crystals, implanted on large white crystals of Bouglisite (a calciferous Anglesite, containing 20 per cent. of $CaSO_4$). These make most beautiful specimens, especially when examined under the lens.

Professor Friedel has produced artificially both Boléite and Cumengéite in minute crystals.

Loose trillings, acute or truncated, as shown in the illustration, 2 to 8 mm. diameter. 50c. to \$4.00

The same on Bouglisite, 25c. to \$4.00. (Large specimens in illustration.) A few extra choice ones at \$5.00 to \$10.00

Loose simple crystals (3 small crystals figured), 2 to 3 mm. 5c. to 25c.

The same, smaller, on Phosgenite or clay matrix. 25c. to \$1.00

Bouglisite crystals. 10c. to 50c.

Sphaerocobaltite. A pink carbonate of cobalt, heretofore almost unknown. Typical specimens. \$1.00 to \$5.00

Remingtonite. Described in 1852, but specimens were unknown in any of the great collections until discovered at Boléo by Dr. Foote. It

occurs with Gypsum, in crystalline masses. Its delicate rose tint is in pretty contrast with green Atacamite. But a small amount was found.

50c. to \$3.50

Calcite, Guanajuato. Several trips were made to Mexico and the old mining districts of Guanajuato, Zacatecas, Queretaro and other points visited. We have a good stock of the now famous Calcites, embracing curious types, such as the flat "Papierspath" and various other modifications, some neatly mounted on Amethyst.

25c. to \$3.00

Apophyllite. Shapely groups of brilliant and almost opalescent crystals, clear and perfect. Rare.

\$3.00 to \$15.00

Valencianite. A kind of Adularia in white crystals on Quartz.

25c. to \$2.00

Mazapilite. An exceedingly rare mineral, first brought from Mexico by Dr. Foote, and fully described by Prof. G. A. Koenig in 1889. It is an arseniate of calcium and iron, occurring in small black, well-developed orthorhombic prisms.

\$1.00 to \$3.00

Cuprodescloizite. A Descloizite containing 8 per cent. of copper. Occurring in drusy botryoidal masses; $1\frac{1}{2}$ to 4 in.

25c. to \$2.50

Polybasite. Crystallized specimens.

\$1.50 to \$5.00

Pink Grossularite. A pretty rose garnet in marble. Polished slabs.

50c. to \$4.00

Perfect detached crystals.

10c. to 50c.

Opal. Rough opals in matrix, as found in the Queretaro Opal Mines. Milky, fire and precious grades.

15c. to \$1.50

Cut milky opals at one-quarter former prices.

15c. to \$1.50

Mexican Onyx, Argentite, Pyrrargyrite, Embolite, etc., etc.

England.

Special trips to Cumberland and Cornwall, together with recent consignments from the Bigrigg and Stank Mines, afford us a large assortment of selected material.

Calcite, "Butterfly Twin." So called because of the imitative shape assumed. An odd and pretty illustration of twinning.

$\frac{3}{4}$ to 3 in.

25c. to \$2.50



Calcite, Hexagonal and Scalenohedral.

In groups as showy and as cheap as Rock Crystal.

25c. to \$3.00

Witherite. Large six-sided pyramidal crystals (orthorhombic twins), on matrix.

25c. to \$4.00

Smoky Quartz on Hematite. Brilliant and perfect dodecahedral Quartz crystals, on sparkling surface of velvet-black Hematite. Very handsome.

35c. to \$2.00

Aragonite. Groups of "Cathedral Spires."

25c. to \$2.00

Barytocalcite. Distinct crystals in groups $1\frac{1}{2}$ to 4 in.

25c. to \$2.00

Fluorite. A great variety of colors, including yellow, green, purple, blue, etc. Handsome and cheap. 10c. to \$2.00

Barite. Delicate transparent blue, tabular crystals, prettily grouped with white Calcite. Other forms, including the "Golden Phantom," a clear honey-yellow crystal with internal parallel lines. 15c. to \$2.00

Cassiterite, Cronstedtite, Siderite, Olivenite, Torbernite, Cuprite, Modified Fluor, Stannite, etc., etc.

Matlockite. Secured through the purchase of an old collection. Now very rare. Good sized crystals on matrix. \$3.00 to \$10.00

France.

Siderite. Purchased from a collection formed many years ago. Fine large rhombs in groups. 50c. to \$5.00

Allemontite. Metallic masses showing bright fracture. \$1.25 per pound, $\frac{1}{2}$ the European retail price. 25c. to \$2.00

Axinite, Fontainebleau Limestone, Octahedrite, Aragonite, Offr  te, Dauphiny Quartz, Pyrite, etc.

Sicily.

Extended trips were made to Sicily, Elba, Sardinia and important localities on the peninsula. More than seventy boxes of minerals were thus obtained, which, with consignments received later, comprise probably a finer and larger stock of Italian minerals than exists even in Europe. Magnificent Sulphurs and other minerals once obtained in abundance are now being sold at surprisingly low prices.

Sulphur. It is impossible to describe the superb beauty of this mineral to those unfamiliar with it, and our illustration (Plate VI) gives but a poor idea of its appearance. Three large groups, rivalling in splendor of color, lustre and perfect form, anything in the great museums, are offered at \$15.00, \$25.00 and \$50.00 respectively. Equally beautiful groups 2 to 8 in. 25c. to \$8.00

Detached crystals, transparent, 1 to 2 in. 25c. to \$1.50

Selenite. Perfectly transparent "fish-tail" twins. Very showy as case specimens. 6 to 12 in. 75c. to \$4.00

Selenite inclosing Sulphur or Aragonite. One of the oddest and loveliest examples of the interesting phenomenon of inclusion. \$1.00 to \$10.00

Melanophlogite. A pseudomorphous form of silica, occurring in translucent yellow cubes on Sulphur. 25c. to \$1.50

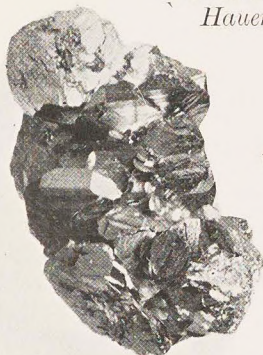
Aragonite. Splendid groups of six-sided prisms (orthorhombic twins, showing the stri   plainly). The crystals are pale blue or yellowish, very brilliant and often measuring over 1 in. across. 25c. to \$5.00

Two larger groups. \$15.00 and \$20.00

Calcite pseudomorph after Aragonite. These curious six-sided shell-like forms show the partial replacement of the original prism,

the interior being hollow. Odd and exceedingly attractive. Three large ones, \$7.50, \$15.00 and \$20.00.

Choice specimens, 3 to 8 in., 50c. to \$4.00
Hauerite, Selen sulphur, Simetite, Celestite, etc.



Elba.

Hematite. These wonderful crystallizations have been long and widely known. The little group shown here is one of many inexpensive specimens offered. Crystals, $\frac{1}{2}$ to $1\frac{1}{2}$ in., are coal-black, brilliant, sharp and often display a beautiful iridescence. $1\frac{1}{2}$ to 6 in.

10c. to \$4.00

Pyrite.

The commonest form is the pyritohedron, frequently modified.

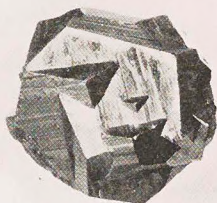
A pretty and typical twinning is illustrated. 1 to $1\frac{1}{2}$ in.

50c. to \$1.50

Simple crystals, $\frac{3}{4}$ to 2 in.,

15c. to \$1.00

Limonite pseudomorph after Pyrite. Pyritohedron. 25c. to 75c.



Sardinia.

Phosgenite. Brilliant, well-formed crystals, some over 1 in., on matrix. Prices are low for so rare a mineral. 75c. to \$5.00

Anglesite. Our specimens bear out the assertion that this locality produces the finest Anglesites in the world. Clear-cut, sharp crystals, colorless to gray-black; all of a dazzling adamantine lustre.

Neat matrix specimens, 50c. to \$3.00

Vesuvianite, Leucite, Sal Ammoniac, Anorthite, Meionite, Sodalite, Chondrodite, and other Vesuvian minerals.

Meneghinite. The mines were worked in the days of the early Romans, and have been long closed down. The species is exceedingly rare, but we offer crystals $\frac{1}{2}$ to 1 in. long. 50c. to \$1.00

Heteromorphite, Topazolite, Violan, Mimetical Pyrite, Cavernous Quartz, etc.

Belgium.

A consignment just in, includes the following species. Few are attractive in appearance nor well crystallized; but many are very rare, and what is important, correctly named. Typical examples are furnished at 50c. to \$1.00

Klementite, Ottrélite, Sericite, Richellite, Koninckite, Destinezite, Koppite, Magnoferrite, Moresnetite, Skolopsite, Delvauxite, Rubellan, Bastonite, Monheimite, Davreuxite, Nose, Hyalosiderite, Pholerite, Strengite, Breislakite, Strontianite, Faujasite, Libethenite, Andalusite, Sartorite, Grunauite and other rarities.

Germany and Austria.

Importations from time to time afford us a good series of species.

Tetradymite, crystallized. Distinct crystals, measuring 2 to 5 mm.
 Matrix specimens. 50c. to \$3.00
 Loose, complete crystals. 5c. to 25c.
Stephanite. Bright symmetrical crystals, 25c. to \$2.50
Metacinnabarite, crystallized. Very small but well-defined crystals on matrix. Exceedingly rare. 50c. to \$2.00
Roselite. Small crystals in matrix, 75c. to \$3.50
Pucherite, Smaltite, Chloanthite, Proustite, Annabergite, Clausthalite, Wolframite, Ullmannite, Fluorite, Laumontite, Niccolite, Carnallite and other Stassfurt Salts, Tetrahedrite, etc., etc.

Greece.

We were the first to bring to America the rare species found at Laurium, a personal visit securing many interesting species.

Laurionite, described by Vom Rath, is the best example known of a metallic mineral species formed within historic times by the combined agency of man and nature. It is a well-crystallized, orthorhombic oxychloride of lead, formed by the action of sea water on the rich slag dumped into the sea about two thousand years ago, when Pericles was building the Parthenon from the profits of the mines of Laurium. The strange circumstances of its formation, its distinct crystallization, adamantine lustre and association with perfect little Phosgenite crystals, in cavities of the gray slag, make it of especial interest. 50c. to \$3.00

Serpierite. A rare sulphate of copper and zinc. Small crystals of fine blue color in cavities. 25c. to \$3.00

Smithsonite, Adamite, Jarosite, Scorodite, and the rare Fiedlerite.

Lorandite on Realgar, Allchar, Macedonia. A new and rare sulpharsenide of Thallium. Distinct crystals, \$1.25 to \$6.00

Norway and Sweden.

The more important localities were visited. At Arendal a small steamer was hired, and many points reached, which are inaccessible by the ordinary modes of travel. These special efforts furnished more than one great European collection with specimens of species formerly unrepresented. Many of these rarities are found only at Scandinavian localities, and were almost unknown in American collections.

The species collected and purchased numbered over one hundred. The careful study given these unfamiliar minerals by high authorities insured correct labeling.

Eudidymite. Heretofore rare. Excellent crystals of typical monoclinic form, detached and grouped. 25c. to \$1.50

Native Lead. Very rare. Flattened masses of the pure metal, on matrix. \$1.00 to \$5.00

Brandtite. Small crystals on matrix. 50c. to \$3.00

Euxenite. Shining black masses. At the rate of \$3.50 per pound, less than European prices. Also crystallized. 25c. to \$2.00

Thorite. Detached crystals of two types: (1) Long prisms and pyramid. (2) Low pyramid with short prism, doubly terminated. $\frac{1}{2}$ to 1 in. 25c. to \$10.00

Rhodonite var. Paisbergite. One of the few showy Scandinavian minerals. The crystals are of exquisite pink color, bright and of well-defined triclinic form, though of different habit from the better known Fowlerite. Grouped in cavities of hard rock. $1\frac{1}{2}$ to 4 in. 25c. to \$5.00

Sunstone (Oligoclase); also *Chatoyant Microcline*. Pretty polished pieces of very fine quality. \$1.00 to \$2.50

Vesuvianite. Well crystallized on matrix. 50c. to \$2.00

Chondrodite. Large, grayish-green crystals. 75c. to \$3.00

Ganomalite; also *Cerite*. Massive. 25c. to \$2.00

We mention a few of the crystallized species still offered in good specimens. For others see VIII, Alphabetical Price List.

Allactite, Bjelkite, Braunnite, Carginite, Cleveite, Cobaltite, Gadolinite, Glauco-dot, Hausmannite, Inesite, Keilhanite, Kentrolite, Långbanite, Malacon, Mosandrite, Orangite, Pinakiolite, Pyrosomalite, Sarkinite, Scabite, Wagnerite and Eschynite.

Russia.

Topaz. Splendid crystals, suitable for cutting gems, colorless to delicate blue and well formed, $\frac{3}{4}$ to $1\frac{1}{2}$ in. \$5.00 to \$15.00

Platinum Nuggets. Rare. \$1.50 to \$2.00

Malachite. Fine polished specimens. \$1.00 to \$3.00

Diopase. Rare and beautifully crystallized. \$2.00 to \$10.00

Zircon, Wiluite, Clear Golden Beryl, Aquamarine, Alexandrite, and the very rare Crocoite.

Australia.

It is strange that the continent of Australia, with such unlimited mineral wealth and boasting a long catalogue of species native to her mines and quarries, should be so poorly represented in the European collections. Her mineralogy has been ably and exhaustively studied by leading chemists and crystallographers, but no systematic collecting and exporting of specimens has been done. Magnificent crystallizations of Crocoite, Cerussite, Phacolite, and scores of others are recorded, but very few specimens in the past have been exhibited. The introduction of these minerals in Europe is now rendered possible through the services of an Australian mineralogist, who is collecting as our exclusive agent. He has not only a scientific appreciation of minerals, but likewise the collector's instinct, which knows and gets a good specimen. Localities are visited expressly

in our interest; collections are purchased, and everything, including the very best, is at once shipped to us. We are selling at reasonable prices the finest Vivianites, Gmelinites, etc., ever seen, and such things as Newberyite, which were formerly unknown. A letter just received announces the shipment of some fine crystallizations of Newberyite, to arrive about the time this is published. A brief account of the trip to the Skipton Caves, and a plan of the interior, was most interesting. We quote from the letter:

"They are situated some 30 miles southwest of Ballarat, on beautiful undulating but somewhat stony plains. Hired a horse and buggy and took a guide with me on the first visit. We improvised lights made of hessian steeped in kerosene, and after descending a few feet into one of the numerous crater-like depressions, reached the entrance, where a crawl of a few yards led us into the main chamber. It was very dark; a darkness that could almost be felt, and also chill and dampen one. The basaltic roof varies from 20 feet to 2 or 3 feet high. Only a comparatively small portion of the guano is rich in minerals, and a good deal of that has been used as a fertilizer, so that it is very probable that Newberyite will soon be exhausted. I was somewhat disappointed at not being able to find Hannayite, which has been found there. I took a number of samples from various parts and examined them by daylight, but without success."

Newberyite, An insoluble, hydrous phosphate of magnesium, occurring in irregular aggregations of orthorhombic crystals. The individuals are generally thin tabular, with bright faces; rarely thick regular crystals (Dana, Fig. 2) were found. Specimens like the one illustrated, 25c. to 50c. (Selections for future orders will be made from consignment now en route, containing much better crystals.)

Struvite, Skipton Caves. Small crystals.
 5c. and 10c.

Phacolite, Richmond, near Melbourne. A variety of Chabazite, also known as Seebachite or Herschellite; formerly found in a quarry at Richmond. Occurs in "composite twins of great variety and beauty" (Dana). Crystals varying from $\frac{1}{4}$ to $\frac{1}{2}$ in., are scattered attractively over a dull black basalt. The strong reflections from the crystal faces destroy the detail in the illustration attempted on Plate VII. It is safe to say that no one of the beautiful Zeolite minerals is handsomer than this, the close-cut, brilliant white crystals, being well displayed against the dark background. We have also some very rare spherical twinnings. Prices, 25c. to \$4.00

Phillipsite, Richmond. Colorless and often transparent crystals on dark basalt. Three types of perfect crystals. 1. The simple twin (Dana, Fig. 1) is uncommon; 2. Cruciform twin (Fig. 2) is the usual type; 3, more rarely a composite form (Fig. 4), which is a combination of three cruciform twins, suggestive of the Cumengite trillings.

25c. to \$3.00

Aragonite, Richmond. White acicular crystals grouped on basalt.

25c. to \$1.50

Ferrocalcite, Richmond. A unique variety of Calcite occurring in brown tufts of acicular crystals, as shown in Plate VII. It resembles Aragonite in habit and Stilbite in color. Also *Sphaerocalcite* in globules on matrix.

25c. to \$2.00

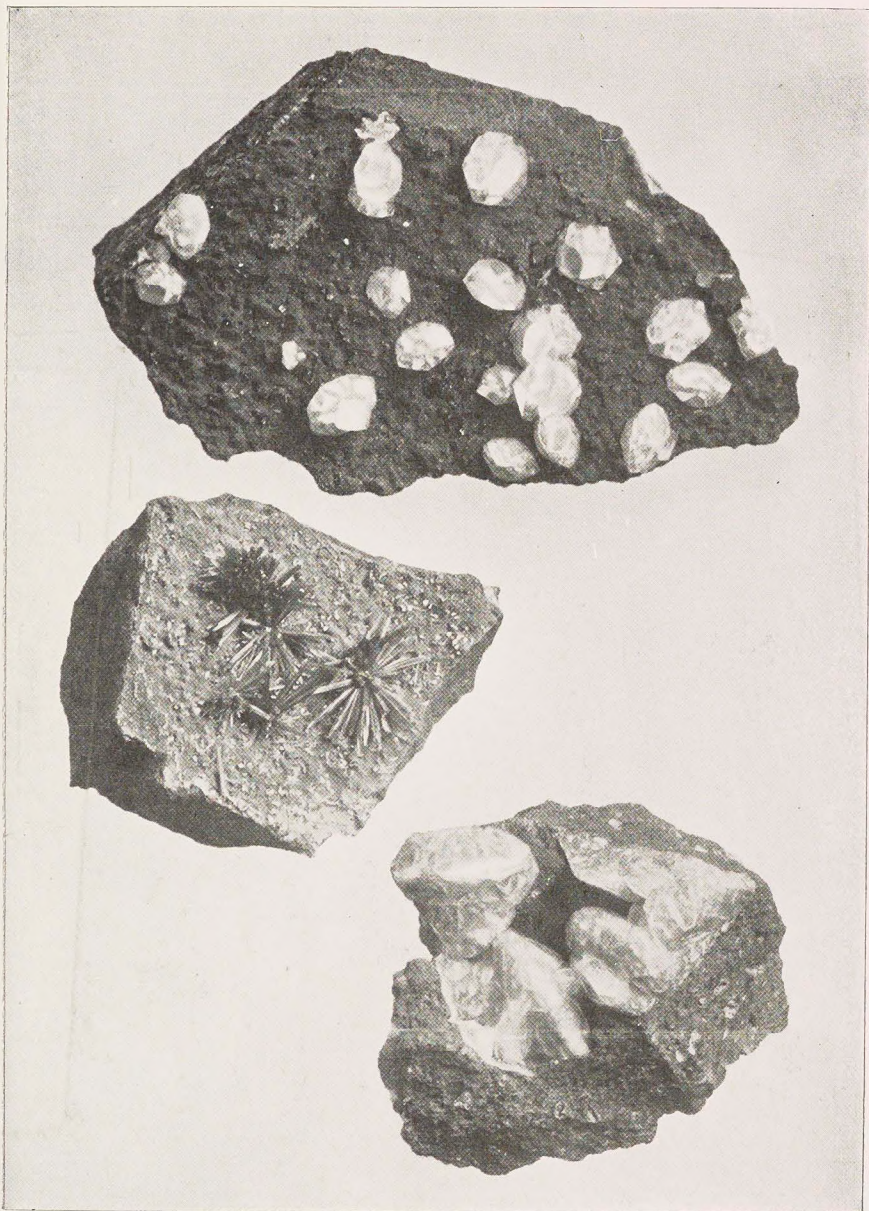


PLATE VII.

Rhombohedral Twin Crystals of Phacolite and Acicular Calcite,
from Richmond, near Melbourne, Victoria.

Gmelinite, from Flinders Island, North Coast of Tasmania.



PLATE VIII.

Gmelinite, Rare. A trip to the Island of Flinders, off the north coast of Tasmania, yielded the finest specimens ever seen of this mineral. Crystals are six-sided twins, flesh-red color and $\frac{1}{4}$ to $\frac{3}{4}$ in. diameter. Some are exceedingly sharp and brilliant, while the largest (Plate VII) are generally duller, often associated with Analcite and Natrolite.

25c. to \$4.00

Mesolite, Flinders. Pretty specimens consisting of spherical, snow-white tufts coating the trap rock.

25c. to \$1.00

Analcite, Flinders. In brilliant, limpid crystals, lining cavities of the trap. Some are dotted with pretty balls of Natrolite.

25c. to \$1.00

Sphærostitbite, Flinders. This interesting form of Stilbite occurs in smooth white spheres of waxy lustre, daintily mounted on the tips of slender Natrolite crystals. Calcite of the primitive form, coated with a transparent Stilbite, is a frequent association; 2 to 4 in.

25c. to \$2.00

Vivianite. The Falls of the Wannon River, Victoria, were visited to collect the wonderful crystallizations reported. The mineral was found imbedded in a volcanic ash, directly under the Falls. It forms aggregates of crystals, the interstices between the bladed crystals being filled with ash, requiring tedious cleaning. Two types were noted, either probably finer than anything yet recorded from other localities.

1. Prismatic bluish-green crystals, exceedingly brilliant, clear and well defined. Their magnificent color, flawless quality and lustre, afford internal lights and reflections which equal those of a Sapphire. Crystallizing freely in limestone cavities. Rare.

2. Flat crystals $\frac{1}{2}$ to $1\frac{1}{2}$ in. long and $\frac{1}{3}$ as broad, in shape not unlike the blade of an oar. Smooth and opaque. These aggregates make attractive and unique specimens.

75c. to \$4.00

Embolite, Broken Hill Mines, N. S. W. Regularly mined as an ore of silver on this rich property, and therefore inexpensive, though former prices were double and treble those now asked. Pure masses of sponge-like and branching forms; also plates in Kaolin. 25c. to \$1.00. Perfect little cubic crystals in cavities of Limonite or Quartz.

50c. to \$2.00

Cerussite, Broken Hill. Six-rayed stellate twins and other beautiful forms; large crystals. Also pure massive pieces.

50c. to \$2.00

Linarite. Small but unusually perfect and brilliant crystals of fine blue color, in Anglesite matrix.

50c. to \$1.00

Crystallized Smithsonite, *Argentiferous Tetrahedrite*, *Galena cubes altered to Anglesite*, *Arborescent Native Copper*, *Crystallized Iodyrite*, *Anglesites* and other Broken Hill minerals.

Africa.

The long abandoned Antimony mines at several points in Algeria were visited, and by blasting and careful searching, excellent specimens were secured.

Nadorite. Solid masses containing groups of fine crystals, some measuring over $\frac{1}{2}$ in. Occasionally pretty little Cerussite crystals are found in the cavities. 2 to 5 in.

50c. to \$2.00

- Senarmontite*. Perfect, transparent crystals in groups. Also duller crystals imbedded in matrix. 25c. to \$3.00
Valentinite. Yellow masses; fibrous structure. 15c. to \$1.50
Diamond Crystals, Kimberly Mines, South Africa. Selected octahedrons. 75c. to \$8.00
 "Tiger Eye," (*Crocidolite altered to Quartz*). Griqualand, South Africa. Rough pieces, 2 to 4 in. 10c. to 75c.
 Polished slabs, very beautiful, both of yellow and the original blue. 15c. to \$3.00
True Crocidolite. A blue, asbestos-like mineral. 10c. to 75c.

Other Foreign Localities.

- Calomel*, Servia. Well crystallized. Extremely rare. Two specimens at \$15.00
Rutilated "Quartz, Flèches d'Amour," Brazil. Long golden red needles of Rutile, piercing masses of Rock Crystal. Choice polished pieces. 50c. to \$9.00
Agate, Banded, black and red. Polished. 10c. to \$2.00
Heulandite and Epistilbite in fine crystallizations from Iceland. \$1.00 to \$8.00
Native Terrestrial Iron, Disco Island, Greenland. Pieces of the mass found and originally described by Prof. Nordenskiöld. Differing from others from the same locality, in that it holds disseminated throughout the mass pieces of the trap rock in which it was imbedded when found, thus proving beyond question its terrestrial origin. Pieces 25c. to \$8.00 (about \$3.00 to \$4.00 per pound). Brightly polished on one side, also etched if desired. \$1.50 to \$10.00
Cryolite, crystallized. Ivigtuk, Greenland. 50c. to \$6.00. Fine white masses, 2 to 6 in. 10c. to 50c.
Eudialyte. Well-defined crystals, $\frac{1}{2}$ to $\frac{3}{4}$ in. on matrix. 25c. to \$3.50
Columbite, Pachnolite, Thomsenolite, Ralstonite, crystallized. 25c. to \$3.00



PLATE IX.

Sample of Specimen and Printed Label. Used in all Collections, except
Fragment Sizes.



PLATE X.

Collection of Perfect Crystals (No. 79).

All inexpensive Collections of $1\frac{1}{2}$ in. Specimens and $\frac{3}{4}$ in. Fragments, are put up in similar Quartered Oak Compartment Cabinets.



XI.

The Sacramento Mountains Meteorite.

The above Print was made direct from a Polished Slab, etched with Acid to show Crystalline Structure, or "Widmannstätten Figures."

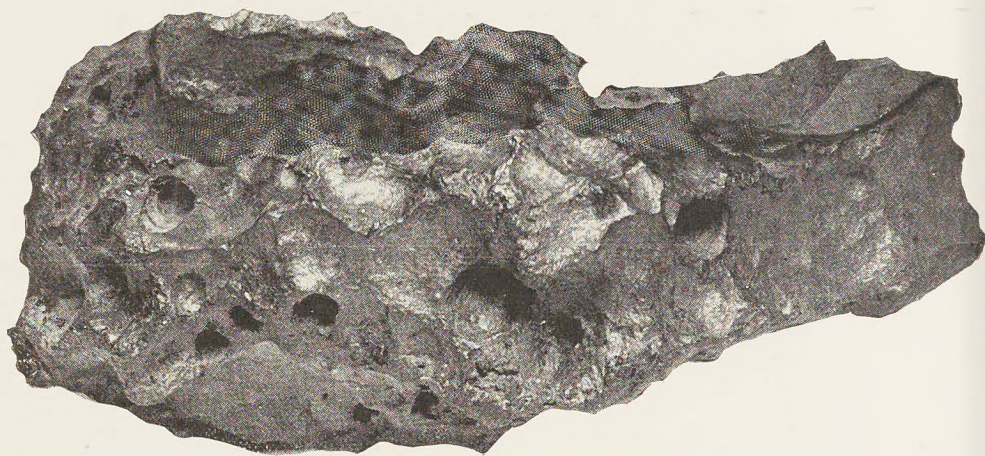
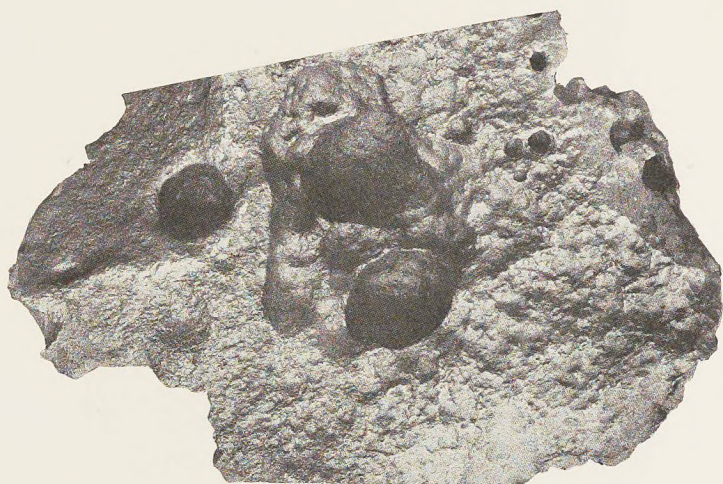


PLATE XII.

Meteoric Irons.

The upper Mass is from the Sacramento M'ts., Eddy Co., N. M. Weight, 414 lbs. General dimensions, 18 in. high x 24 in. wide x 6 in. thick. The base and top were sawed and polished.

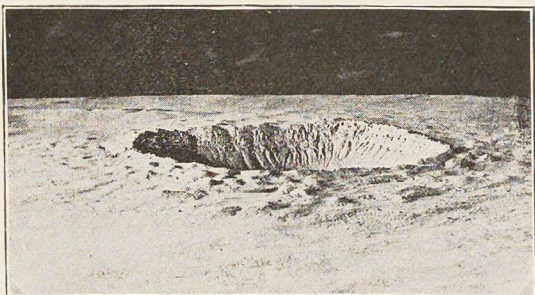
The lower is the original large Mass of Diamondiferous Iron from Canon Diablo, Ariz., described by Dr. A. E. Foote. Weight, complete, 201 lbs. General dimensions, 19x10x7 in.



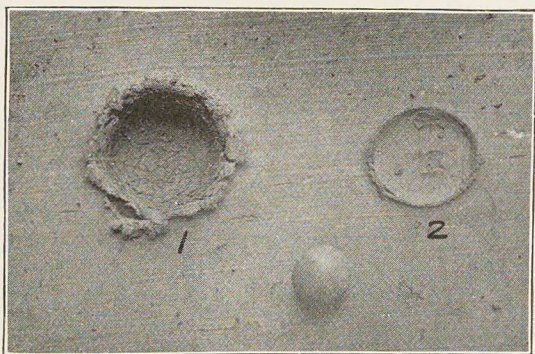
PLATE XIII.

Diamondiferous Meteoric Iron found at Canon Diablo, Arizona.

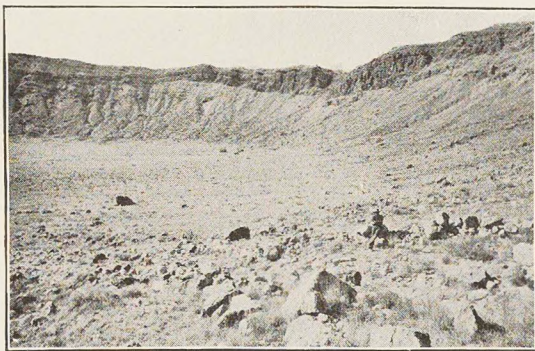
On cutting this Mass, a Diamond was found at the point lettered "D." The faint circle of scratches was produced by the loosened fragments. Analysis was made by Prof. G. A. Koenig. A Description and an Announcement of the Discovery was read by Dr. A. E. Foote, before the American Association for the Advancement of Science, Aug. 20th, 1891.



The Limestone Crater of Arizona, Coon Butte, as seen from the south. Photograph of a model by Mr. Victor Mindeleff.



Craters made by throwing clay balls at a clay target. A ball of the same size is shown. 1 shows the effect of high velocity, 2 of low.



Interior of Coon Butte, as seen from the talus on one side. The cliff below the rim is of limestone.



PLATE XIV.

Wall Cabinet.

Selected polished Stones, Gems, and crystallized Minerals.

II. COLLECTIONS.

A professor of mineralogy at one of the oldest seats of learning in Europe, speaking of an order about to be placed with us, said: "I want *good* working specimens—I like this Opalized-wood because it shows plainly that it is a petrification, and this Calcite because it does not need a pointer to call attention to its form." That is precisely the aim of our collections. Throughout, they *illustrate* the study, a thing which poor or carelessly selected specimens can never accomplish. A few examples of the crystallizations used, are illustrated in "I. New Arrivals."

Correct and accurate labeling is of the highest importance. A neatly printed label, giving name, composition and locality, accompanies every specimen. (See illustration of labeling and mounting, Plates IX and X.) Prices can be quoted on any size of specimens desired.

Substitutions and changes will be made without charge, except in "stock" collections, or when very rare kinds are desired. It is claimed for our collections that they are not only lower priced, but are prepared with greater care, have a greater number of good crystallizations and typical specimens, are labeled better, and present a handsomer appearance than any offered for sale elsewhere. We have in stock, selected and packed ready for shipment immediately on receipt of order, all collections catalogued, except those marked with an asterisk (*). The latter require several days for preparation.

The value of specimens is not measured simply by size. Any of the following sizes can be put up to order in poorly crystallized or massive specimens, at lower figures than quoted here for good crystallizations.

Probably no department of our business is more favorably and widely known than that furnishing educational material. We received the highest award and medal given for "*Collections of Minerals*" at the Centennial, Philadelphia, 1876. Also medals or diplomas at the Exposition of St. Louis, 1875; New Orleans, 1884-86; Louisville, 1886; London, 1887; Paris, 1889.

A. STANDARD COLLECTIONS EVENLY COVERING THE SCIENCE.

Advanced.

Arranged according to the generally accepted classification of Dana ("System of Mineralogy," 6th ed.), but can be revised as purchasers may desire.

***No. 1. Complete Type Collection.** 1,200 specimens, averaging $4\frac{1}{2} \times 3\frac{1}{2}$ in., \$1,800.

Intended for an institution desiring a collection, which may be fairly accepted as complete. Over five hundred distinct species are represented, though some specimens are of necessity below the average size; those omitted are generally very rare and not to be found in the largest museums. In addition are included all essential varieties and types, embracing variations of form and color, and yet not encumbering the collection with merely local examples. It is from a stock of the extent and scope of that to be found only in our establishment, that such a series of specimens can be selected. Catalogue and full description of Nos. 1 to 4 on application.

***No. 2. Complete Type Collection.** 1,200 specimens, averaging $3\frac{1}{2} \times 2\frac{1}{2}$ in., \$900.

The same as No. 1, in smaller specimens. It is quite as good for all practical purposes, though not making as imposing a display as the preceding.

***No. 3. Specialists' Complete Type Collection.** 1,200 specimens, averaging $2\frac{1}{2} \times 2$ in., \$450.

Arranged for specialists or advanced students, though serving the purpose of institutions desiring a complete collection at a relatively low price. (Same list as for No. 1.)

***No. 4. Specialists' Complete Type Collection.** 1,200 specimens, averaging $1\frac{1}{2} \times 1\frac{1}{2}$ in., \$180.

The specimens selected are good examples of their kind, but often lack the perfect crystallization exhibited in the preceding. (Same list as for No. 1.)

***No. 5. University Collection.** 600 specimens, averaging $4\frac{1}{2} \times 3\frac{1}{2}$ in., \$750.

The complete list (following No. 12) is arranged to include such minerals as are taken up in most university or college courses. All species chemically important and essential in the illustration of a comprehensive and thorough course are represented. Examples are shown of all ores and economic compounds which the miner or prospector may wish to

recognize, as well as the numerous varieties of well-known minerals with which every student should be familiar.

The list contains 375 distinct species, and a careful elimination of obscure and unimportant names has been observed. As outlined, this collection meets the requirements of a purely scientific course, and is an invaluable aid in the technical and professional work of laboratory or field. The specimens are in every respect equal to those of No. 1, about one-half being well crystallized, and the remainder, typical crystalline or massive examples of minerals rarely or never occurring in good crystals.

*** No. 6. University Collection. 600 specimens, averaging $3\frac{1}{2} \times 2\frac{1}{2}$ in., \$375.**

The same as the preceding, except that the specimens are smaller.

*** No. 7. Specialists' Collection. 600 specimens, averaging $2\frac{1}{2} \times 2$ in., \$200.**

An improvement on a similar collection formerly listed by us at the same price. The present list is that of the "University Collection."

*** No. 8. Specialists' Collection. 600 specimens, averaging $1\frac{1}{2} \times 1\frac{1}{2}$ in., \$75.**

Like the preceding, this is an improvement on our old collection—that listed at \$87.50.

*** No. 9. College Collection. 360 specimens, averaging $4\frac{1}{2} \times 3\frac{1}{2}$ in., \$300.**

The list (which follows No. 12) omits the starred (*) names. No effort is spared to make this as useful an advanced collection as the limited number of specimens will permit. The tendency usually is to pass the "rarities" and take only the most important kinds in the choosing of a list for either educational or practical work. The "*College Collection*" is, therefore, the most popular of the larger collections. As in the others, every care is exercised that it may thoroughly illustrate the descriptions in the text-books and serve as a useful adjunct to private study or class work. It makes a splendid display, and includes a large number of very beautiful specimens.

*** No. 10. College Collection. 360 specimens, averaging $3\frac{1}{2} \times 2\frac{1}{2}$ in., \$150.**

In every way like the preceding, except that the specimens are smaller.

No. 11. Students' Collection. 360 specimens, averaging $2\frac{1}{2} \times 2$ in., \$75. Drawer Cabinet, with pasteboard trays, \$13.75 extra.

This is arranged according to the same list, and the same care is taken in preparation as with the larger sized collections.

No. 12. Students' Collection. 360 specimens, averaging $1\frac{1}{2} \times 1\frac{1}{2}$ in., \$25. Compartment Cabinets, \$4.80 extra. Weighing, when packed with cabinets, about 66 pounds.

According to the "College Collection" list which follows.

The following list complete, forms the UNIVERSITY COLLECTION of six hundred specimens. The list omitting the starred names forms the COLLEGE COLLECTION of three hundred and sixty.

ABBREVIATIONS.—Cryst.—crystallized, generally groups of good sized, distinct crystals on gangue; xl (or xls.)—detached crystals; xline—crystalline structure; mass.—massive.

I. Native Elements.

- Diamond, xl.
- Graphite.
- Sulphur, cryst.
- *Selensulphur, cryst.
- Arsenic.
- *Allemontite, xline.
- Antimony, xline.
- Bismuth, xline.
- Gold, in quartz.
- * " dust and grains.
- * " var. Electrum, xls.
- *Silver, wire.
- * " plates.
- * " with copper.
- Copper, arbores., xls.
- * " large mass.
- * " in conglom.
- Mercury.
- *Lead.
- Platinum.
- *Iridosmine.
- *Iron, terrestrial, xline.
- * " meteoric. "
- * " " stone.

II. Sulphides, Selenides, Tellurides, Arsenides, Antimonides.

- Realgar, cryst.
- Orpiment, cryst.
- Stibnite, cryst.
- Bismuthinite, cryst.
- Tetradymite, "
- Molybdenite, xl.
- *Dyscrasite.
- *Domeykite.
- Argentite, xl.
- *Hessite, xline.
- Petzite, xline.
- Galena, xl.
- * " cleavage.
- * " argent. granular.
- Chalcocite, cryst.
- * " massive.
- Sphalerite, cryst.
- * " ruby, cryst.
- * " mass. gray.
- * " Schalenblende.
- * " fibrous.
- * " cadmiferous.
- *Metacinnabarite.
- *Tiemannite.
- Alabandite.
- Cinnabar, cryst.
- *Covellite.

- Greenockite.
- *Wurtzite.
- Millerite, xline.
- Niccolite.
- Pyrrhotite.
- Bornite.
- Linnæite.
- Chalcopyrite in Calcite.
- * " xls. on Dolom.

- Stannite.
- Pyrite, pyritohedron.
- * " octahedron.
- * " cube.
- * " " distorted.
- * " massive.
- Hauerite, 2 xls.
- Smaltite.
- Cobaltite, cryst.
- *Gersdorffite, "
- *Sperrylite.
- Marcasite, "cockscomb,"
- * " disk (radiated xls.)
- Löllingite.
- * " var. Leucopyrite.
- Arsenopyrite, cryst.
- *Glauco-dot, 2 xls.
- Sylvanite, cryst.
- *Calaverite, xline.
- *Nagyagite, cryst.
- *Kermesite, "

III. Sulpho-Salts.

- *Emplectite, cryst.
- Jamesonite, "
- Bournonite, "
- Pyrrargyrite, "
- Proustite.
- Tetrahedrite, cryst.
- * " mass.
- *Tennantite, cryst.
- *Meneghinite, "
- Stephanite, "
- Polybasite.
- *Enargite.
- *Argyrodite.

IV. Haloids.

- Halite, transp. cleav.
- * " granular.
- Sylvite, cryst.
- Sal Ammoniac.
- Cerargyrite, cryst.
- Embolite.
- Fluorite, group ameth. xls.
- * " blue "
- * " yellow "
- * " green octah. cleav.
- * " white granular.

- *Fluorite, Antozonite.
- Cryolite, cryst.
- Laurionite, "
- Atacamite, "
- *Nocerite.
- Carnallite.
- *Tachyhydrite.
- *Pachnolite, cryst.
- *Thomsonolite, "

V. Oxides.

1. Oxides of Silicon.

- Quartz, group, xls.
- * " 6 xls.
- * " cavernous, xl.
- * " geode (drusy).
- * " var. Amethyst, xls.
- * " " Rose.
- * " " Citrine.
- * " " Smoky, xl.
- * " " Milky.
- * " " Sapphire.
- * " " Aventurine.
- * " " Chloritic, xl.
- * " " Chalcedony.
- * " " Carnelian, pol.
- * " " Chrysoprase.
- * " " Plasma.
- * " " Bloodstone.
- * " " Agate, pol.
- * " " Moss Agate.
- * " " Onyx, pol.
- * " " Flint.
- * " " Hornstone.
- * " " Jasper.
- * " " Flexible sandstone.
- * " " Jasperized wood.
- * " " Tiger Eye (pseudomorph after Crocidolite).

- Tridymite.
- Opal, var. precious.

- * " " fire.
- * " common green.
- * " Opal-agate.
- * " Opalized wood.
- * " Hyalite.
- * " Geyserite.
- * " Tripolite.

2. Oxides of Semi-Metals.

- *Senarmontite, cryst.
- *Valentinite.
- *Molybdite.
- Cervantite.

3. *Oxides of Metals.*

- *Cuprite, cryst. octahedral.
 " " capillary.
 " " massive.
 *Periclase, cryst.
 Zincite.
 *Tenorite, cryst.
 " " Melaconite.
 *Corundum, Sapphire, xl.
 * " " Ruby, "
 " " ord., xl.
 " " cleavage.
 " " Emery.
 Hematite, cryst.
 * " " var. Micaceous.
 " " " Specular ore.
 " " " Kidney "
 " " " Oolitic red ochre.
 * " " Clay iron-stone.
 Martite, cryst.
 Ilmenite, "
 Spinel, "
 * " " var. Ruby, 12 xls.
 * " " " Ceylonite.
 *Gahnite, cryst.
 Magnetite, cryst.
 * " " 3 modif. xls.
 * " " sand.
 * " " granular.
 " " Lodestone.
 Franklinite, cryst.
 Chromite.
 Chrysoberyl, "
 * " " var. Alexandrite,
 twin xl.
 Hausmannite, cryst.
 *Braunite, "
 Cassiterite, cryst.
 * " " var. wood-tin.
 " " " stream-tin.
 * " " rough xls. in Al-
 bite.
 Rutile, red, cryst.
 * " " in quartz cryst.
 " " " Nigrine, cryst.
 * " " " geniculated.
 Octahedrite, cryst.
 Brookite, cryst.
 " " cryst. (paramorph
 after Rutile).
 Pyrolusite, cryst.
 *Turgite.
 Diaspore, cryst.
 Göthite, "
 Manganite, "
 Limonite, botryoidal.
 " " var. Yellow ochre.
 " " " Bog ore.
 " " " Clay-iron-stone.
 " " pseudomorph after
 Pyrite.
 *Xanthosiderite.
 Bauxite.
 Brucite, cryst.
 Sassolite.

- *Hydrotalcite.
 Chalcophanite.
 Psilomelane.
 Wad.

VI. *Oxygen Salts.*1. *Carbonates.*

- Calcite, gr. scalenoh. xls.
 " " gr. hexagonal, "
 " " " nailhead" "
 " " " butterfly twin,"
 xl.
 " " modified xls.
 " " var. Iceland-spar.
 * " " " Argentine.
 * " " cleavage (orange).
 " " coarse limestone
 (blue).
 " " var. Statuary Mar-
 ble, polished.
 * " " " Siena Marble,
 polished.
 " " " Tennessee Mar-
 ble, polished.
 * " " " Lithographic
 stone.
 * " " " Hydraulic
 limestone.
 " " " Chalk.
 " " " Oölite.
 " " " Stalactite.
 " " " Mex. Onyx, pol.
 * " " " Travertine.
 * " " " Calc-tufa.
 Dolomite, cryst. "pearl
 spar."
 " " massive.
 *Ankerite, cryst.
 Magnesite.
 Siderite, cryst.
 * " " xline.
 Rhodochrosite, cryst.
 Smithsonite.
 Aragonite, gr. prism. xls.
 " " twin xl.
 " " " Flos-ferri."
 Witherite, cryst.
 Strontianite, xline.
 Cerussite, white cryst.
 " " brown xline, mass.
 *Barytocalcite, cryst.
 *Phosgenite, "
 *Malachite, cryst.
 " " " velvety.
 " " " banded, pol.
 Azurite, cryst.
 " " ball of xls.
 *Aurichalcite.
 *Hydrozincite.
 *Gay-Lussite, xls.
 *Trona.
 *Hydromagnesite.
 Zaratite.
 *Remingtonite.

2 (a). *Anhydrous Silicates.*

- Petalite.
 *Eudidymite, cryst.
 Orthoclase, group xls.
 * " " " Baveno" twin xl.
 " " " Carlsbad" twin xl.
 " " " cleavage.
 * " " Adularia, gr. xls.
 " " " Sanadin, "
 * " " " Loxoclase, "
 *Perthite, xline.
 *Microcline, "
 " " var. Amazonstone,
 xl.
 * " " " Chesterlite, xl.
 Albite, cryst.
 " " " lamellar, xline.
 * " " Moonstone, xline.
 * " " var. Pericline, cryst.
 *Oligoclase, white.
 " " var. Sunstone.
 Andesine.
 Labradorite, polished.
 Anorthite, cryst.
 Leucite, large xl.
 * " " xls. in lava.
 *Enstatite, altered xl.
 " " var. Bronzite, xline.
 Hypersthene.
 Pyroxene, var. Diopside,
 cryst.
 " " var. Malacolite, xl.
 * " " " Violan.
 " " " Coccoilite, xline.
 * " " " Diallage, xline.
 " " " Schefferite, xl.
 * " " " Jeffersonite, xl.
 " " " Augite, xl.
 * " " " Fassaita, xl.
 Acmite (Aegirite), cryst.
 Spodumene, xline.
 * " " var. Hiddenite, xl.
 Jadeite.
 Wollastonite, cryst.
 Pectolite, radiated.
 Rhodonite, massive.
 * " " var. Paisbergite.
 " " " Fowlerite.
 *Anthophyllite.
 Amphibole, var. Tremo-
 lite, cryst.
 " " var. Actinolite, cryst.
 " " " Asbestos.
 * " " " Mountain Cork.
 * " " " Byssolite, cryst.
 " " " Edenite, xline.
 " " " Hornblende, xl.
 " " " " mass.
 *Glaucophane.
 Crocidolite.
 Beryl.
 " " var. Emerald, cryst.
 * " " " Aquamarine.
 *Eudialyte.
 Iolite, xline.

- *Iolite, var. Cordierite, cryst.
 *Ganomalite.
 Nephelite.
 Cancrinite.
 Sodalite.
 Hauynite.
 *Noselite.
 Lazurite (Lapis Lazuli).
 *Helvite.
 *Eulytite.
 *Zunyite.
 Garnet Grossularite, cryst.
 * " Cinnamon St., cr.
 " Pyrope (precious).
 " Almandite, Salida, xl.
 " Almandite, Alaska, cryst.
 * " Spessartite, cryst.
 * " Topazolite, cryst.
 " Polyadelphite, cr.
 * " Uvarovite, cryst.
 Schorlomite.
 Monticellite, cryst.
 *Forsterite.
 *Chrysolite, precious.
 " common.
 *Tephroite.
 *Willemite, green mass.
 " var. Troostite, xl.
 Phenacite, cryst.
 Dioptase, "
 *Pyrosmalite, "
 *Meionite, "
 Wernerite, xl.
 * " var. Nuttallite, cryst.
 " " pink Scapolite.
 *Vesuvianite, xline.
 " gr. xls.
 Zircon, 6 xls.
 * " modif. cryst.
 * " var. Hyacinth, xls.
 Thorite, cryst.
 Danburite, "
 *Topaz, 6 yellow xls.
 " 6 clear "
 " massive.
 * " var. Pycnite.
 Andalusite, xl.
 " Chiasolite, xl.
 *Sillimanite, cryst.
 " var. Fibrolite, xline.
 Cyanite, cryst.
 Datolite, "
 *Gadolinite.
 Zoisite, gray xline.
 * " rose (Thulite).
 Epidote, xls.
 " mass. xline.
 *Piedmontite.
 Allanite.
- Axinite, cryst.
 Prehnite, "
 Chondrodite, cryst.
 *Bertrandite, "
 Calamine, "
 Cerite.
 Tourmaline, black, cryst.
 " Rubellite, "
 * " Indicolite, "
 " green, "
 " brown, "
 *Dumortierite,
 *Stauroilite, xls. in rock.
 " 3 twin xls.
 2 (b). *Hydrous Silicates*.
 Apophyllite, cryst.
 Heulandite, "
 *Brewsterite, "
 *Epistilbite, "
 Phillipsite, "
 Harmotome, "
 Stilbite, ordinary xls.
 " "wheat sheaf" xls.
 * " Sphaerostilbite.
 *Laumontite, cryst.
 Chabazite, "
 * " var. Phacolite (twin xls).
 *Gmelinite, cryst.
 Analcite, "
 Natrolite, "
 *Scolecite, "
 *Mesolite, "
 Thomsonite.
 *Chlorastrolite.
 Muscovite, xl.
 " var. Damourite.
 * " Fuchsite.
 Pinite (Agalmatolite).
 Lepidolite, xline.
 *Zinnwaldite, cryst.
 Biotite, "
 Phlogopite, "
 Margarite, "
 *Seybertite, "
 *Chloritoid.
 Clinocllore, cryst.
 *Penninite.
 Prochlorite.
 *Corundophilite.
 Cronstedtite, cryst.
 *Jefferisite, xl.
 *Vermiculite, xl.
 *Serpentine, cryst., pseudo.
 * " var. Noble.
 " Common.
 " Williamsite.
 * " Marmolite.
 " Chrysotile.
 * " Baltimorite.
 Deweylite.
 *Genthite.
 Garnierite.
- *Talc, var. Foliated.
 " " Soapstone, gran.
 " " French Chalk.
 Sepiolite (meerschau).
 Glauconite (marl).
 Kaolinite.
 *Halloysite.
 *Cimolite.
 Pyrophyllite.
 *Allophane.
 *Thaumasite.
 *Uranophane.
 Chrysocola.
 *Bementite, xline.
 *Caryopilite, cryst.
 Titanite, xl.
 *Tscheffkinitite.
 Astrophyllite, cryst.
 Dysanallyte, 6 xls.
 3. *Niobates, Tantalates, etc.*
 *Koppite.
 Microlite, 2 xls.
 *Fergusonite, cryst.
 Columbite, "
 *Tantalite.
 Samarskite.
 *Euxenite.
 4. *Phosphates, Arsenates, etc.*
 Xenotime, cryst.
 *Monazite, xl.
 " sand.
 *Pucherite, cryst.
 *Triphyllite, "
 *Beryllionite, "
 Apatite, xl. brown.
 * " green.
 * " transp.
 * " Phosphorite.
 *Hydroapatite, cryst.
 Phosphate Rock.
 Pyromorphite, cryst.
 " green.
 " cryst. brown.
 *Mimetite, cryst.
 Endlichite, group xls.
 Vanadinite, gr. xls. red.
 * " brown.
 Wagnerite, cryst.
 *Triplite.
 Amblygonite.
 Olivenite, cryst.
 *Libethenite, "
 Adamite, "
 Descloizite, ord. red, cryst.
 * " var. Cuprodes-cloizite.
 Clinoclasite, cryst.
 Dufrenite.
 Lazulite, cryst.
 Arseniosiderite.
 *Struvite, 3 xls.
 *Brandtite, cryst.
 Vivianite, "

Erythrite, cryst.
 Annabergite.
 Scorodite, cryst.
 *Strengite.
 Variscite.
 *Pharmacolite.
 *Newberyite, cryst.
 *Conichalcite, "
 *Euchroite, "
 Tyrolite.
 Chalcophyllite.
 *Ludlamite, cryst.
 Wavellite, "
 Turquois.
 *Cacoxenite, cryst.
 *Childrenite, "
 *Liroconite, "
 Torbernite, "
 Autunite, "
 *Nadorite, "
 *Eedemite, cryst.
 Soda Nitre.

5. *Borates, etc.*

Ludwigite.
 Boracite, cryst.
 *Howlite.
 Colemanite, cryst.
 Borax, xl.
 Ulexite.
 Uraninite.
 *Gummite.

VII. Sulphates, etc.

Thenardite, 3 xls.
 Glauberite, cryst.

Barite, brown xl.
 * " blue xl.
 " compact massive.
 * " fetid, granular.
 Celestite, cryst.
 " cleavage.
 Anglesite, cryst.
 Anhydrite.
 Crocoite, cryst.
 *Kainite.
 Hanksite, 3 xls.
 Leadhillite, cryst.
 Brochantite, "
 *Linarite, "
 *Mirabilite.
 Kieserite.
 Gypsum, var. Selenite,
 3 xls.
 " var. Selenite, twin.
 " " Selenite, cleav-
 age.
 " " Satin Spar.
 * " " Alabaster.
 " " Rock-plaster.
 *Epsomite.
 *Goslarite.
 Melanterite.
 Chalcanthite.
 *Blödite.
 Polyhalite.
 *Halotrichite.
 *Roemerite.
 *Langite.
 *Herrengrundite, cryst.
 *Serpierite, cryst.
 Copiapite.
 *Aluminite.

Alunite, cryst.
 Jarosite, "

VIII. Tungstates, etc.

Wolframite, cryst.
 Scheelite, cryst.
 *Stolzite, cryst.
 *Wulfenite, red cryst.
 " yellow cryst.

IX. Salts of Organic Acids.

Mellite.

Hydrocarbon Compounds

Ozocerite.
 *Pyropissite.
 Succinite.
 Copalite.
 *Tasmanite.
 *Idrialite.
 *Petroleum.
 Asphaltum.
 Elaterite.
 *Alberite.
 Anthracite Coal.
 Bituminous Coal.
 *Lignite.
 Cannel Coal.
 *Brown Coal.

New Species.

Boleite, 3 xls.
 *Cumengite, 3 xls.
 *Lawsonite, cryst.
 *Northupite, xl.

Elementary.

The following are all accurately labeled with printed label, giving name, chemical composition, crystallization and locality, as shown in Plate IX. The specimens are in every way as good—in fact, are exact duplicates of those in the more expensive advanced collections. (Collections illustrating various elementary text-books on Mineralogy and Geology are given in Division "C," beyond.)

No. 13. Academy or High School Collection. 180 specimens, averaging 4½x3½ in., \$100. Handsome glass cases, \$47 extra. See Plate VIII.

Prepared especially to meet the demand among Normal and High Schools and private Academies, for a showy collection, embracing only the common species, or those which are most essential in a short course. (List follows No. 17.) The striking colors and choice crystallizations, in

which the collection abounds, make it when properly cased, a most attractive and valuable ornament for the class-room or school museum.

No. 14. Academy or High School Collection. 180 specimens, averaging $3\frac{1}{2} \times 2\frac{1}{2}$ in., \$50. Quartered oak drawer cabinet with pasteboard trays, \$11.75 extra. Glass cases, \$36 extra.

Fully as good as the preceding in every respect, except that the specimens are smaller. This is a decided improvement over the collection formerly sold by us under this name and at the same price. The elimination of rare species and substituting of important varieties of common species adds greatly to its usefulness. (See descriptive list following No. 17.) With a larger stock to draw from in perfecting this collection and bringing it up date, we believe that even greater approval will be won for it than in the past.

No. 15. Students' Collection. 180 specimens, averaging $2\frac{1}{2} \times 2$ in., \$25. Drawer cabinet with pasteboard trays, \$8.75 extra. Weighing when packed with cabinet about 125 pounds.

An excellent collection for amateur or student; arranged according to the ACADEMY LIST.

No. 16. Students' Collection. 180 specimens, averaging $1\frac{1}{2} \times 1\frac{1}{2}$ in., \$10. Polished quartered oak compartment cabinet, \$2.40 extra. Weighing when packed with cabinet about 33 pounds; arranged according to the ACADEMY LIST.

No. 17. 180 Fragments, \$6.60. Including quartered oak compartment cabinet. Weighing when packed in two packages about $7\frac{1}{2}$ pounds.

Fragments have numbers attached to correspond to following list of names:

ACADEMY COLLECTION LIST.

Describing collections catalogued Nos. 13 to 17, inclusive. Nos. 18 to 22 are selected from this list, with occasional variations. (In the *Complete Mineral Catalogue* will be found a numerical list, according to Dana's *System of Mineralogy*, 6th ed., 1892, which gives the name, crystallization and chemical composition in words and symbols of all known mineral species, as well as the names of all varieties. A supplement compiled from recent scientific literature completes the list to date.)

Carbon.

- 1. Diamond.** An octahedral crystal showing rounded edges and curved faces, with the triangular pittings characteristic in rough diamonds. From the famous

KIMBERLY MINES, SOUTH AFRICA.

- 2. Graphite.** *Black Lead or Plumbago.* A piece of the variety occurring in compactly foliated masses.

CEYLON.

Sulphur.

- 3. Native Sulphur.** A brilliant yellow group of orthorhombic crystals. This species is noted for the magnificent crystallizations occurring in the historic and extensive Sicilian beds.

CIANCIANA, SICILY.

Arsenic.

(See also No. 42, Arsenopyrite.)

4. **Orpiment.** A crystallized specimen exhibiting the characteristic yellow color.
MERCUR, UTAH.

Antimony.

5. **Native Antimony.** A bright crystalline specimen of the pure metal as it occurs in a recently discovered deposit
NEAR SOUTH RIVERSIDE, CALIFORNIA.
6. **Stibnite.** A crystalline mass, showing the yellow alteration to antimony oxide.
ZAIATCHA, PODRINE, SERVIA.

Bismuth.

7. **Native Bismuth.** A specimen showing disseminated through it bright plates of the pure metal.
SCHNEEBERG, SAXONY.

Molybdenum.

8. **Molybdenite.** A large metallic looking crystal in Pyroxene.
ALDFIELD, QUEBEC, CANADA.

Gold.

9. **Native Gold,** disseminated in small grains through Quartz.
CALIFORNIA.

Platinum.

10. **Native Platinum** in small scales or grains as it is washed from auriferous sands.
URAL MOUNTAINS, SIBERIA.

Silver.

11. **Native Silver.** A specimen from
ONTONAGON CO., MICHIGAN.
12. **Argentite.** *Silver Glance.* A crystallized example of this rich ore.
GUANAJUATO, MEXICO.
13. **Pyrrargyrite,** *Antimonial "Ruby Silver,"* from
AUSTIN, NEVADA.
14. **Cerargyrite.** A good example of the sectile ore, known as "*Horn Silver.*"
SILVER CITY, NEW MEXICO.
15. **Stephanite.** *Brittle Silver.* Small crystals and rich massive ore illustrated in one piece.
LAKE CHELAN DISTRICT, MOORE CO., MONTANA.

Mercury.

16. **Cinnabar.** The principal ore of quicksilver.
NEW ALMADEN MINES, CALIFORNIA.

Copper.

17. **Native Copper.** A crystalline mass of pure copper from the famous Lake Superior copper region.
HOUGHTON CO., MICHIGAN.
18. **Chalcocite.** *Copper Glance.* A massive piece from the great Anaconda Mines at
BUTTE, MONTANA.
19. **Bornite.** *Peacock Copper.* The handsome purple iridescence of this mineral is well illustrated.
UNION BRIDGE, CARROLL CO., MARYLAND.
20. **Chalcopyrite.** *Copper Pyrites.* A pretty specimen showing the rich brass yellow crystals thickly scattered through white Calcite. (See also No. 97.)
FRENCH CREEK MINES, PENNSYLVANIA.

21. **Tetrahedrite.** *Gray Copper or Fahlerz.* A piece of the argentiferous ore as occurring at the
BROKEN HILL MINES, NEW SOUTH WALES.
22. **Cuprite.** The typical massive variety as mined in
ONTONAGON CO., MICHIGAN.
23. **Malachite.** *Green Carbonate.* A beautiful bright green specimen with a delicate velvety surface.
COPPER QUEEN MINE, COCHISE CO., ARIZONA.
24. **Azurite.** Limonite covered with brilliant gem-like crystals of the "*blue carbonate*." This mine has produced the finest crystallizations of this mineral ever found.
COPPER QUEEN MINE, COCHISE CO., ARIZONA.
25. **Chrysocolla** in Quartz rock.
SHANNONVILLE MINES, MONTGOMERY CO., PENNA.
26. **Brochantite.** Rich green crystallization from
FRISCO, BEAVER CO., UTAH.

Lead.

27. **Galena.** *Galenite.* A good example of the principal lead ore, in bright cubic crystallization.
JOPLIN, JASPER CO., MISSOURI.
28. **Pyromorphite.** Typical green hexagonal crystals scattered over Quartz.
WHEATLEY MINES, NEAR PHOENIXVILLE, PENNA.
29. **Mimetite.** *Campylite.* A rare mineral.
ROUGHTEN GILL, CUMBERLAND, ENGLAND.
30. **Vanadinite.** One of the most beautiful minerals in lustre and in the clear-cut quality of the crystals. An example of the red variety, highly prized by collectors.
YUMA CO., ARIZONA.
31. **Wulfenite.** A good group of yellow crystals from the
ORGAN MOUNTAINS, NEW MEXICO.
32. **Cerussite.** A representative of this common ore as mined at
BROKEN HILL, NEW SOUTH WALES.
33. **Anglesite.** Another of the numerous lead minerals noted for their adamantine lustre and perfect crystallization. A choice crystal on granular galena from the
LEAD MINES AT MONTE PONI, SARDINIA.

Tin.

(See also No. 55.)

34. **Cassiterite.** Large irregular crystals scattered through Albite. From the well-known Black Hills Tin District.
MARGARET MINES, PENNINGTON CO., SOUTH DAKOTA.

Titanium.

35. **Rutile.** The variety called "*nigrine*," owing its black color to a small percentage of iron. This specimen shows the complex tetragonal twinning common to the species.
MAGNET COVE, ARKANSAS.
36. **Brookite.** A rarer mineral, having the same composition as Rutile, and occurring with the latter in fine orthorhombic crystallizations at
MAGNET COVE, ARKANSAS.

Iron.

37. **Pyrrhotite.** *Magnetic or Niccoliferous Pyrites.* Commonly occurring massive and often mined as an ore of nickel. A bronze-colored specimen from
SOUTH STRAFFORD, VERMONT.
38. **Pyrite.** *Iron Pyrites*, sometimes called "*Fool's Gold*." A very common mineral, occurring in various bright and showy forms. One of the most common is the pyritohedron, illustrated in this crystal.
ISLAND OF ELBA.

39. **Pyrite** *var. Massive.* A sample of the ore mined at RIO TINTO, SPAIN.
40. **Marcasite**, "*Cockscomb Pyrites.*" A group of crystals as found with zinc and lead ores of JOPLIN, MISSOURI.
41. **Marcasite** *var. Radiated.* A crystalline disk showing the odd and interesting form which the mineral sometimes assumes. Occurring in unusually symmetrical specimens in the coal measures near SPARTA, ILLINOIS.
42. **Arsenopyrite.** *Arsenical Pyrites or Mispickel.* A typical specimen from ACTON, MAINE.
43. **Hematite.** *Specular Iron.* A beautiful group of these dazzling coal-black crystals as found in the historic iron mines on the ISLAND OF ELBA.
44. **Hematite.** *Massive Specular Ore.* Mined throughout the Lake Superior iron region. ST. LOUIS CO., MINNESOTA.
45. **Hematite** *var. Red Ochre.* The massive "oölitic" kind. CLINTON, NEW YORK.
46. **Magnetite.** Two detached crystals showing a common modified octahedron, and a rather puzzling distorted octahedron. Like Hematite, it is a very important ore of iron. ESSEX CO., NEW YORK.
47. **Magnetite** *var. Lodestone.* A good piece of this variety possessing strong polarity, sometimes known as "Natural Magnet." MAGNET COVE, ARKANSAS.
48. **Franklinite.** A good crystallized specimen of this species, known to occur only at one locality, where it is mined extensively as an ore of zinc. FRANKLIN FURNACE, NEW JERSEY.
49. **Chromite.** *Chromic Iron.* The usual massive form. TEXAS, LANCASTER CO., PENNSYLVANIA.
50. **Limonite.** Another common iron ore, often occurring with bright botryoidal surfaces. This specimen exhibits a splendid iridescence not unusual to the species. IRON MOUNTAIN, CUSTER CO., SOUTH DAKOTA.
51. **Limonite.** *Yellow Ochre.* The variety used in making paints, etc. LITTLESTOWN, PENNSYLVANIA.
52. **Limonite.** *Pseudomorph after Pyrite.* This common alteration of Pyrite is illustrated in a group of octahedral crystals. JARILLA MOUNTAINS, NEW MEXICO.
53. **Siderite.** A crystallized specimen, showing the perfect brown rhombs in pretty contrast to the white background of Cryolite. IVIGTUT, GREENLAND.
54. **Columbite.** A crystallized specimen occurring as an association of tin ore. Contains the rare Niobic and Tantallic acids. PENNINGTON CO., SOUTH DAKOTA.
55. **Wolframite.** Specimen showing the crystalline mineral associated with the rare Stannite (Tin Sulphide). NEAR REDRUTH, CORNWALL, ENGLAND.

Nickel.

56. **Millerite.** A fibrous crust composed of slender hair-like crystals on niccoliferous pyrites (Pyrrohotite). GAP MINE, LANCASTER CO., PENNA.
57. **Niccolite.** A bright mass exhibiting the metallic nature of this ore. BEBRA, HESSE, GERMANY.
58. **Garnierite.** A green amorphous ore. DOUGLAS CO., OREGON.

Cobalt.

59. **Cobaltite.** Three perfect isometric crystals, showing the different habits assumed. ENGGRUFVORNA, SWEDEN.

Manganese.

60. **Pyrolusite.** Bright needle-like crystallizations of this common ore.
TENNY CAPE, HANTS Co., NOVA SCOTIA.
61. **Rhodonite.** A pretty crystallized specimen of the variety called "*Fowlerite*,"
mined at FRANKLIN FURNACE, NEW JERSEY.
62. **Rhodochrosite.** Specimen showing the delicate pink color in combination
with Iron Pyrites. ALICANTE, LAKE Co., COLORADO.

Zinc.

63. **Sphalerite.** *Zinc Blende.* A fine group of typical dark crystals as mined at
JOPLIN, JASPER Co., MISSOURI.
64. **Zincite.** A deep red mineral, rarely crystallized, extensively mined as an ore
at this famous locality, but comparatively unknown elsewhere.
FRANKLIN FURNACE, NEW JERSEY.
65. **Willemite.** A large hexagonal crystal in Calcite, of the variety called *Troostite*.
FRANKLIN FURNACE, NEW JERSEY.
66. **Calamine.** A crystallized specimen.
FRIEDENSVILLE, PENNSYLVANIA.
67. **Smithsonite.** A specimen of a delicate green tint, showing the characteristic
rounded surfaces. KELLY, NEW MEXICO.

Aluminium.

68. **Corundum.** A gray cleavage specimen banded with the deep blue of *Sapphire*.
TALLAPOOSA Co., ALABAMA.
69. **Corundum** *var. Emery.* The typical granular massive form.
MINES NEAR NAXOS, ASIA MINOR.
70. **Bauxite.** A sample of the massive concretionary variety mined in
FLOYD Co., GEORGIA.
71. **Spinel.** Octahedral crystals in Calcite.
SUSSEX Co., NEW JERSEY.
72. **Cryolite**, or "*Ice Stone*." A mineral long mined at this locality, but elsewhere
quite rare. Used in the manufacture of sodium salts and aluminium.
IVIGTUT, GREENLAND.
73. **Wavellite.** Beautiful green radiations in stellated form.
MONTGOMERY Co., ARKANSAS.
74. **Kaolin.** An important mineral used in the manufacture of porcelain, etc.
DIXON'S QUARRY, NEWCASTLE Co., DELAWARE.
75. **Turquoise.** A good illustration of the occurrence of this beautiful gem in the
natural form. JARILLA MOUNTAINS, NEW MEXICO.
76. **Alunite.** *Alum Stone.* Mined at
MUZAI, HUNGARY.

Calcium.

77. **Fluorite.** Group of clear purple to amethystine crystals. A mineral well
known among collectors for the splendid and many-colored crystalliza-
tions, in which it occurs at various localities. CUMBERLAND, ENGLAND.
78. **Fluorite** *var. Massive.* White in color and cleavable.
ROSICLAIRE, ILLINOIS.
79. **Calcite** *var. Dog-tooth Spar.* A common form found in particularly showy
specimens at the zinc mines about JOPLIN, JASPER Co., MISSOURI.
80. **Calcite**, *clear hexagonal prisms.* A choice group of perfect and very brilliant
crystals. FRIZINGTON, CUMBERLAND, ENGLAND.
81. **Calcite** *var. Iceland Spar.* An attractive specimen exhibiting nicely the phe-
nomenon of double refraction. JOPLIN, JASPER Co., MISSOURI.
82. **Calcite** *var. Statuary Marble.* White, fine grained quality.
RUTLAND, VERMONT.

83. **Calcite** *var. Chalk.* A white compact piece.
DOVER CLIFFS, ENGLAND.
84. **Calcite** *var. Stalactite.* A pretty example of this curious formation, having a delicate sea-green tint due to the presence of copper. From a cave in the
COPPER QUEEN MINE, ARIZONA.
85. **Calcite** *var. Mexican Onyx.* A polished section with vari-colored bands.
TECALI, PUEBLA, MEXICO.
86. **Calcite** *var. Calc. Tufa, or "Petrified Moss."* Specimen showing impressions of moss and stems.
OSWEGO, NEW YORK.
87. **Aragonite.** A perfect six-sided prism, or twin-form of the orthorhombic system, called "pseudo-hexagonal." Detached crystal from
BASTENNES, FRANCE.
88. **Aragonite** *var. Flos Ferri.* A kind noted for the beauty and variety of the coralloidal forms it assumes.
ORGAN MOUNTAINS, NEW MEXICO.
89. **Apatite.** A symmetrical and clear-cut crystal of hexagonal form, reddish brown in color.
NEAR EGANVILLE, RENFREW CO., ONTARIO, CANADA.
90. **Anhydrite.** An example of the commonest type—compact massive.
ALBERT CO., NEW BRUNSWICK.
91. **Gypsum** *var. Selenite.* Three clear monoclinic crystals, as perfectly symmetrical as glass models.
MAHONING CO., OHIO.
92. **Gypsum** *var. Selenite.* A mineral so perfect in transparency that it finds special application in optical work. A fine cleavage piece.
WAYNE CO., UTAH.
93. **Gypsum** *var. Satin Spar.* A characteristic and pretty example from
DERBYSHIRE, ENGLAND.
94. **Gypsum** *var. Rock Plaster.* A massive variety commonly employed in making plaster of paris.
GRAND RAPIDS, MICHIGAN.
95. **Brucite.** A crystallized specimen showing good cleavage. A rare mineral.
TEXAS, LANCASTER CO., PENNSYLVANIA.
96. **Magnesite.** A white compact piece from the mines on the
ISLAND OF NEGROPONTI, GREECE.
97. **Dolomite.** *Pearl Spar.* A showy specimen made up of the peculiar saddle-shaped rhombohedrons characteristic of this mineral. Scattered over these are small but symmetrical tetrahedrons of Chalcopyrite.
JOPLIN, JASPER CO., MISSOURI.
98. **Dolomite** *var. Magnesian Marble.* A granular crystalline kind, from
SING SING, NEW YORK.

Barium.

99. **Barite.** *Heavy Spar.* A specimen of the common form—compact crystalline, with a somewhat lamellar structure. Much resembling the preceding, but distinguished by its relatively high density.
CHESHIRE, CONNECTICUT.
100. **Witherite.** A crystalline specimen.
FALLOWFIELD, NORTHUMBERLAND, ENGLAND.

Strontium.

101. **Celestite.** A transparent pale-blue specimen, showing perfect cleavage—a common type.
STRONTIAN ISLAND, LAKE ERIE.
102. **Strontianite.** Columnar, massive in structure.
DREISTEINFURT, WESTPHALIA.

Sodium and Potassium.

103. **Halite.** *Rock Salt.* A colorless and marvellously clear cubic cleavage. Its perfect transparency and property of transmitting light equally in all directions, gains for it a limited application in optical work.
SAN BERNARDINO CO., CALIFORNIA.

104. **Colemanite.** A very beautiful group of clear crystals, with adamantine lustre.
From the borax mines in
SAN BENARDINO Co., CALIFORNIA.
105. **Borax.** A symmetrical and perfect crystal of this well-known compound.
ESMERALDA Co., NEVADA.
106. **Sylvite.** A sample of this potassium salt mined on a large scale at
STASSFURT, GERMANY.

Oxides of Silicon.

107. **Quartz var. Rock Crystal.** A handsome group of the large clear crystals found
in abundance for many years in the "Crystal Mountains,"
NEAR HOT SPRINGS, ARKANSAS.
108. **Quartz var. Amethyst.** A group of the purple crystals from the silver mines of
GUANAJUATO, MEXICO.
109. **Quartz var. Rose.** A choice translucent piece of this variety of Quartz, showing
good color.
CUSTER, SOUTH DAKOTA.
110. **Quartz var. Smoky. Cairngorm Stone** or "Smoky Topaz," as it is sometimes
styled. A crystal from
PIKE'S PEAK, COLORADO.
111. **Quartz var. Milky.** An opaque, massive specimen.
MONTGOMERY Co., PENNSYLVANIA.
112. **Quartz var. Chalcedony.** A fine translucent piece, showing the characteristic
waxy lustre and mamillary surface.
TAMPA BAY, FLORIDA.
113. **Quartz var. Blood Stone, or "Heliotrope."** A very pretty polished specimen.
SOUTH PARK, COLORADO.
114. **Quartz var. Banded Agate.** A beautiful polished piece of this familiar form
of Silica, showing the successive layers or deposits, in various colors.
BRAZIL.
115. **Quartz var. Moss Agate.** A specimen of choice quality imitative of moss or
tree growth, similar to that found at many other localities.
LARAMIE Co., WYOMING.
116. **Quartz var. Flint.** A nodule showing sharp fracture, and on the rounded surface,
traces of Chalk. From the chalk cliffs at
DOVER, ENGLAND.
117. **Quartz var. Jasper.** A piece of the red variety.
NEAR OTTAWA, CANADA.
118. **Quartz var. Italcolumyte, or Flexible Sandstone.** A slab of this strange mineral,
illustrating its flexible quality well.
RUTHERFORD Co., NORTH CAROLINA.
119. **Quartz var. Jasperized Wood.** A choice specimen of this exquisitely colored
ornamental stone. From the famous "Chalcedony Park" or
PETRIFIED FOREST, NEAR HOLBROOK, ARIZONA.
120. **Quartz var. Tiger-Eye.** (An altered Crocidolite, or "Quartz pseudomorph after
Crocidolite.") A polished piece, possessing to a remarkable degree the
chatoyant lustre which has made the material so popular as a fancy stone
for paperweights, etc.
GRIQUALAND, SOUTH AFRICA.
121. **Opal var. Precious.** Showing the delicate play of colors characteristic of this
highly-prized and popular gem.
QUERETARO, MEXICO.
122. **Opal var. Fire.** The red tints of the internal reflections suggest the name.
QUERETARO, MEXICO.
123. **Opal var. Green-opal.** Regarded as the handsomest example of the various
colors in which *Common Opal* occurs. A mottling of red through the translucent
green, adds to the beauty of this specimen.
WATERTVILLE, DOUGLAS Co., WASHINGTON.
124. **Opal var. Opalized Wood.** A section of a branch of this wonderful petrification,
reproducing in the most minute detail the cells, fibre, rings of growth, and
irregularities of wood structure. In this respect it is by far the finest example
of wood petrification known. It possesses a high natural polish and
is of a rich yellow-brown color. Recently discovered near
CLOVER CREEK, LINCOLN Co., IDAHO.

125. *Opal var. Tripoli. Infusorial Earth.* The kind called "*Electro-Silicon*," used for polishing purposes.

NEAR VIRGINIA CITY, NEVADA.

Silicates.

(a) The Feldspars.

126. *Orthoclase. Common Feldspar.* A group of large and well-defined crystals of the common habit.

PIKE'S PEAK, COLORADO.

127. *Orthoclase. Carlsbad Twin.* A neat crystal of this common type of twinning.

PUY-DE-DOME, FRANCE.

128. *Orthoclase. Common Feldspar.* A piece showing the perfect cleavage common in this species.

ELAIN, DELAWARE CO., PENNSYLVANIA.

129. *Microcline var. Amazon Stone.* A green triclinic feldspar well known among collectors for the superb crystals found at this locality. A choice crystal.

PIKE'S PEAK, COLORADO.

130. *Albite.* A cleavable lamellar white variety, known as *Clevelandite*, showing the faint striations characteristic of the triclinic feldspars.

AUBURN, MAINE.

131. *Oligoclase var. Sunstone, or "Adventurine Feldspar."* A pretty cleavage piece, spangled with golden scales, giving fire-like reflections when turned in the light. (Due to included crystals.)

TVEDESTRAND, NORWAY.

132. *Labradorite.* A polished piece of this most beautiful and interesting mineral. The play of colors in varied shades of red, green and blue give a charming effect.

LABRADOR.

133. *Enstatite var. Bronzite.* A crystalline specimen.

WEBSTER, JACKSON CO., NORTH CAROLINA.

(b) Pyroxene, Amphibole, etc.

134. *Pyroxene.* A crystal nicely illustrating the common habit.

NEAR EGANVILLE, RENFREW CO., ONTARIO, CANADA.

135. *Pyroxene var. Malacolite.* A complete crystal of symmetrical and regular outline.

SING SING, NEW YORK.

136. *Pyroxene var. Cocolite.* A green variety made up of crystalline grains in white limestone.

OXBOW, JEFFERSON CO., NEW YORK.

137. *Spodumene.* A crystalline specimen.

CHESTERFIELD, MASSACHUSETTS.

138. *Wollastonite. Tabular Spar.* Monoclinic crystals in Calcite.

DIANA, LEWIS CO., NEW YORK.

139. *Amphibole var. Tremolite.* In slender crystals of pale gray color.

GOVERNEUR, NEW YORK.

140. *Amphibole var. Actinolite.* A typical example of the green Amphibole. The radiated bladed or fibrous structure is nicely shown.

HUNTINGTON, MASSACHUSETTS.

141. *Amphibole var. Asbestos.* Used for fire-proof cloth, etc. (See No. 169.)

NEAR MEDIA, DELAWARE CO., PENNSYLVANIA.

142. *Amphibole var. Common Hornblende.* A crystal of simple monoclinic form from

NEAR EGANVILLE, RENFREW CO., ONTARIO, CANADA.

143. *Beryl.* A common variety of an opaque pale green color.

ACKWORTH, NEW HAMPSHIRE.

144. *Beryl var. Emerald.* A crystal of this valuable gem mineral in a feldspar matrix. The rich emerald green makes a pretty contrast with the white rock.

BIG CRABTREE MT., MITCHELL CO., NORTH CAROLINA.

145. *Garnet var. Grossularite.* A group of pale yellow crystals, showing the dodecahedron modified by the trapezohedron.

WAKEFIELD, QUEBEC, CANADA.

146. **Garnet** *var. Pyrope.* (*Precious Garnet.*) A number of clear, deep red pebbles of gem quality.

COLORADO RIVER, ARIZONA.

147. **Garnet** *var. Almandite.* A large and remarkably symmetrical crystal, showing on a broken corner the red color common in Garnet. Traces of the Chlorite, in which the crystals are found, give them a greenish tinge.

SALIDA, COLORADO.

(c) *The Micæ.*

148. **Muscovite.** *Potash Mica.* A flat hexagonal crystal of this common and important form of Mica.

JACKSON Co., NORTH CAROLINA.

149. **Biotite.** *Magnesia-Iron Mica.* A black variety.

RENFREW Co., ONTARIO, CANADA.

150. **Phlogopite.** A kind of Biotite, generally of bronze color. If a thin sheet be held before the eye and a distant light be viewed through it, a six-rayed star appears plainly. This odd and interesting phenomenon of "asterism" is peculiar to this variety of mica.

BURGESS, ONTARIO, CANADA.

151. **Lepidolite.** *Lithia Mica.* A pretty lilac colored piece of scaly-granular structure.

NORWAY, MAINE.

(d) *Tourmaline, Serpentine, etc.*

152. **Clinochlore.** One of the commonest of the hydromicas or Chlorite group. A mica-like sheet cleaved from a large green crystal.

BRINTON'S QUARRY, CHESTER Co., PENNSYLVANIA.

153. **Chrysolite.** *Olivine.* An olive green specimen of the usual form; granular massive.

WEBSTER, JACKSON Co., NORTH CAROLINA.

154. **Zircon.** Several symmetrical and perfect crystals, illustrating the tetragonal prism and pyramid. Selected from the Zircon Sand washed from the

GREEN RIVER, HENDERSON Co., NORTH CAROLINA.

155. **Wernerite.** *Scapolite.* A crystalline specimen.

BOLTON, MASSACHUSETTS.

156. **Vesuvianite.** A piece of the usual brown color, showing the columnar to radiated structure.

WOODSTOCK, MAINE.

157. **Epidote.** A crystallized specimen of the peculiar pistachio green shade, common to the mineral.

NAHANT, MASSACHUSETTS.

158. **Zoisite.** The usual gray massive type.

CONWAY, MASSACHUSETTS.

159. **Tourmaline, Black.** A piece of Quartz penetrated by the shiny columnar crystals.

FORAN GOLD MINE, CUSTER Co., SOUTH DAKOTA.

160. **Tourmaline, (Red) var. Rubellite.** Showing one of the most exquisite tints of this pretty gem stone. The pink crystals with the lilac background of the Lepidolite matrix, make a very attractive specimen. A cross-section as shown on a broken crystal appears to be a rounded triangle, characteristic of the Tourmaline form.

PALA, SAN DIEGO Co., CALIFORNIA.

161. **Topaz.** Noted for its great brilliancy and clearness when cut—qualities which are also well illustrated in its natural crystallizations. Three limpid and beautifully terminated crystals of slightly different forms.

THOMAS MOUNTAIN, MILLARD Co., UTAH.

162. **Titanite.** *Sphene.* A dark-brown crystal of monoclinic form.

RENFREW Co., ONTARIO, CANADA.

163. **Andalusite** *var. Chiastolite.* The polished section of a crystal of this variety shows a dark cross, due to the presence of regularly arranged carbonaceous inclusions.

LANCASTER, MASSACHUSETTS.

164. **Cyanite.** A fine blue specimen formed of thin, bladed crystals, packed closely together.
CHEROKEE CO., ALABAMA.
165. **Pyrophyllite.** A pearly foliated mass, showing the usual radiated structure.
GUILFORD CO., NORTH CAROLINA.
166. **Staurolite.** "*Cross Stone.*" A perfect crystal, showing the odd and pretty habit of twining common to this species.
FANNIN CO., GEORGIA.
167. **Talc.** *Steatite* or *Soapstone.* A specimen illustrating the somewhat foliated structure characteristic of the species.
LAFAYETTE, MONTGOMERY CO., PENNSYLVANIA.
168. **Serpentine var. Williamsite.** A beautiful translucent green kind belonging to the class of "*Precious Serpentes.*"
TEXAS, LANCASTER CO., PENNSYLVANIA.
169. **Serpentine var. Chrysotile.** The principal "*Asbestos*" of commerce. The solid masses of parallel fibres are green in color, with a silky lustre, separating easily into very light and fine threads. (The true Amphibole *Asbestos* is generally coarser and white, or nearly so.)
EAST TEMPLETON, QUEBEC, CANADA.
170. **Datolite.** A group of clear glassy crystals, with faint greenish tinge, showing the complex and highly modified form.
BERGEN HILL, NEW JERSEY.
171. **Prehnite.** A very pretty green specimen.
GUTTENBERG, NEW JERSEY.
172. **Apophyllite.** Crystals exhibiting the simple tetragonal prism and pyramid, with basal plane.
PATERSON, NEW JERSEY.
173. **Pectolite.** A characteristic example of the radiated structure; composed of fine sharp needles, the form in which the mineral is commonly found.
BERGEN HILL, NEW JERSEY.

(e) *The Zeolites.*

174. **Natrolite.** Slender square prisms on the matrix. Called "*Needle Zeolite*" because often found in bunches of very long and slender crystals.
BERGEN HILL, NEW JERSEY.
175. **Analcite.** Glassy crystals of sharp and well-defined trapezohedral form, on matrix.
TWO ISLANDS, NOVA SCOTIA.
176. **Chabazite.** A group of white rhombohedrons, having nearly the angles of a cube. The common type.
GABLE STATION, COLUMBIA RIVER, OREGON.
177. **Stilbite.** The familiar form of crystals, grouped on matrix.
GABLE STATION, COLUMBIA RIVER, OREGON.
178. **Heulandite.** Well-formed monoclinic crystals exhibiting the high pearly lustre, characteristic of this species.
PATERSON, NEW JERSEY.

Hydrocarbons.

179. **Copalite.** *Fossil Copal* or "*Zanzibar Gum.*" A fair type of the many fossil resins classed as "*Ambers,*" all closely related to the true Amber (*Succinite*). This clear yellow specimen shows an insect caught in the liquid resin.
ZANZIBAR, AFRICA.
180. **Bituminous Coal.** An example of one of the various kinds of Mineral Coal. A very pretty iridescent specimen.
FROSTBURG, MARYLAND.

No. 18. **School Collection.** 120 specimens, averaging 4 $\frac{1}{2}$ x 3 $\frac{1}{2}$ in., \$60. Glass cases, \$36 extra.

Simply an abridgment of Academy collection No. 14; arranged for schools desiring to cut down the specimens to the minimum number re-

quired in a brief course. Except in point of size, it presents the same attractive and showy appearance as the foregoing, and forms an excellent nucleus, about which may be conveniently gathered other important minerals. The list, which follows No. 22, is exactly as recommended by Prof. E. S. Dana in the appendix of *Minerals and How to Study Them*, 1895. Although the collection is arranged to accompany this admirable and highly popular little book, it answers the requirements of other elementary works. (A brief description of the specimens is given in the preceding ACADEMY LIST.)

No. 19. School Collection. 120 specimens, averaging $3\frac{1}{2} \times 2\frac{1}{2}$ in., \$30. Quartered oak drawer cabinet and pasteboard trays, \$8.75 extra.

Identical with No. 18, except that the specimens are smaller.

No. 20. Pupil's Collection. 120 specimens, averaging $2\frac{1}{2} \times 2$ in., \$15. Drawer cabinet with pasteboard trays, \$6.75 extra. Weighing when packed with cabinet about 90 pounds.

Put up in nice typical specimens of students' size, according to SCHOOL LIST following No. 22.

No. 21. Pupil's Collection. 120 specimens, averaging $1\frac{1}{2} \times 1\frac{1}{2}$ in., \$6. Quartered oak compartment cabinet, \$1.60 extra. Weighing when packed with cabinet about 19 pounds.

According to the SCHOOL LIST, but with a smaller proportion of perfect crystallizations than the larger sizes.

No. 22. 120 Fragments, \$3.80. Including quartered oak compartment cabinet. Weighing when packed in two packages about 5 pounds.

Numbered to correspond to the following list.

SCHOOL COLLECTION LIST, 120 SPECIMENS.

<i>Carbon.</i>	<i>Lead.</i>	39. Niccolite.
1. Graphite.	18. Galena.	40. Garnierite.
<i>Sulphur.</i>	19. Pyromorphite.	<i>Manganese.</i>
2. Sulphur, native.	20. Mimeticite.	41. Pyrolusite.
<i>Arsenic.</i>	21. Vanadinite.	42. Rhodonite.
3. Orpiment.	22. Cerussite.	43. Rhodochrosite.
<i>Antimony.</i>	23. Anglesite.	<i>Zinc.</i>
4. Stibnite.	24. Wulfenite.	44. Sphalerite.
<i>Molybdenum.</i>	<i>Tin.</i>	45. Zincite.
5. Molybdenite.	25. Cassiterite.	46. Willemite.
<i>Gold.</i>	<i>Titanium.</i>	47. Calamine.
6. Gold, native.	26. Rutile.	48. Smithsonite.
<i>Silver.</i>	<i>Iron.</i>	<i>Aluminium.</i>
7. Silver, native.	27. Pyrrhotite.	49. Corundum.
8. Cerargyrite.	28. Pyrite.	50. Spinel.
<i>Mercury.</i>	29. Marcasite.	51. Cryolite.
9. Cinnabar.	30. Arsenopyrite.	52. Wavellite.
<i>Copper.</i>	31. Hematite.	<i>Calcium.</i>
10. Copper, native.	32. Magnetite.	53. Fluorite.
11. Chalcocite.	33. Franklinite.	54. Calcite, Dog-tooth Spar.
12. Bornite.	34. Chromite.	55. " Iceland Spar.
13. Chalcopyrite.	35. Limonite.	56. " Marble.
14. Tetrahedrite.	36. Siderite.	57. " Stalactite.
15. Cuprite.	37. Columbite.	58. " Mexican Onyx.
16. Malachite.	<i>Nickel.</i>	59. " Calc Tufa.
17. Azurite.	38. Millerite.	60. Aragonite.

61. Apatite.	78. Quartz, Flint.	99. Zircon.
62. Anhydrite.	79. " Jasperized Wood.	100. Scapolite.
63. Gypsum.	80. Opal.	101. Vesuvianite.
<i>Magnesium.</i>	<i>Silicates.</i>	102. Epidote.
64. Brucite.	81. Orthoclase.	103. Zoisite.
65. Dolomite.	82. Albite.	104. Tourmaline.
<i>Barium.</i>	83. Oligoclase.	105. Topaz.
66. Barite.	84. Labradorite.	106. Titanite.
67. Witherite.	85. Pyroxene.	107. Andalusite.
<i>Strontium.</i>	86. " Coccoelite.	108. Cyanite.
68. Celestite.	87. Spodumene.	109. Staurolite.
69. Strontianite.	88. Amphibole.	110. Talc.
<i>Sodium.</i>	89. " Actinolite.	111. Serpentine.
70. Halite.	90. " Asbestos.	112. Datolite.
<i>Silicon.</i>	91. " Hornblende.	113. Prehnite.
71. Quartz, Rock Crystal.	92. Beryl.	114. Apophyllite.
72. " Smoky.	93. Garnet.	115. Pectolite.
73. " Amethyst.	94. Muscovite.	116. Natrolite.
74. " Rose.	95. Biotite.	117. Analcite.
75. " Agate.	96. Lepidolite.	118. Chabazite.
76. " Moss Agate.	97. Clinocllore.	119. Stilbite.
77. " Jasper.	98. Chrysolite.	120. Heulandite.

For kindergarten and other inexpensive children's collections, see division "C," beyond.

B. ECONOMIC; INCLUDING SERIES OF ORES FOR MINERS, PROSPECTORS AND ENGINEERS.

The Metallic Classification of minerals, given at the end of our *Complete Mineral Catalogue*, forms a complete table from which are compiled all our lists of ores, illustrating the metallic constituents of minerals. Under the various metals are sub-headings, following which are the different minerals arranged in order of the per cent. of metal contained. It is of the greatest service to all desiring to consult a complete table of this character.

The specimens in these series are selected solely with the view of obtaining typical representatives of the kinds most commonly met with in the field, and are therefore thoroughly practical and useful. Two sizes are quoted in most cases, the smaller being equal to the larger, except for occasional differences of crystallization.

They are all labeled as shown in Plate IX, with printed label, giving name, composition and locality. For the size, $1\frac{1}{2} \times 1\frac{1}{4}$ in., the compartment cabinets are recommended. (See VII, Supplies.)

Nos. 23 and 24 are kept in stock, prepared for shipment immediately on receipt of order; the others require a few days for special preparation. Lists of the various collections may be had on application.

No. 23. Prospectors' Collection. 120 specimens, averaging $2\frac{1}{2} \times 2$ in., \$16. Quartered oak drawer cabinet, with pasteboard trays, \$6.75 extra. Weighs when packed with cabinet about 90 pounds.

Put up to accompany Osborn's *Prospectors' Field Book and Guide*, third ed., but is adapted to other practical works of the same character. List follows No. 24. This brief collection is intended for those wishing to become acquainted with only the most important economic minerals. Many of the specimens show characteristic crystallization, a very important consideration in seeking to recognize minerals in the varied forms in which they occur.

No. 24. Prospectors' Collection. 120 specimens, averaging 1½ x 1½ in., \$7. Quartered oak compartment cabinet, \$1.60 extra. Weighs when packed with cabinet about 19 pounds.

A convenient working collection, but necessarily composed of specimens of less perfect crystallization than the preceding.

LIST OF PROSPECTOR'S COLLECTION.

Gold.

1. Gold in quartz.
2. Gold ore, pyritiferous.

Silver.

3. Native silver, wire.
4. " " in quartz.
5. Argentite, glance.
6. Stephanite, brittle silver.
7. Cerargyrite, horn silver.
8. Pyrargyrite, ruby silver.

Copper.

9. Copper, native.
10. Cuprite, red oxide.
11. Chalcocite, copper glance.
12. Tetrahedrite, gray copper.
13. Chrysocolla, silicate.
14. Chalcopyrite, copper pyrites.
15. Malachite, green carbonate.
16. Azurite, blue carbonate.
17. Bornite, variegated pyrites.

Lead.

18. Galena, sulphide, cube.
19. " (granular, argentif.).
20. Cerussite, carbonate.
21. Anglesite, sulphate.
22. Pyromorphite, phosphate.

Tin.

23. Cassiterite, oxide (cryst.).
24. Cassiterite, oxide, toad's eye tin.
25. Cassiterite, oxide, stream tin.
26. Stannite, sulphide.

Rare Metals.

27. Columbite.
28. Wolframite.
29. Rutile.
30. Zircon, tetragonal.
31. Platinum.

Zinc.

32. Smithsonite, carbonate.
33. Calamine, silicate.
34. Zincite, oxide.
35. Sphalerite, sulphide.

Iron.

36. Iron, meteoric.
37. Magnetite, oxide, granular.
38. Magnetite, lodestone.
39. Franklinite.
40. Hematite (cryst.).
41. " specular ore.
42. Limonite, brown ore.
43. Siderite, spathic ore.
44. Chromite, chromic ore.
45. Pyrite, sulphide, octahedral.
46. Pyrite, massive.
47. Arsenopyrite, mispickel.

Mercury, Etc.

48. Cinnabar, mercury sulphide.
49. Bismuth.

Nickel and Cobalt.

50. Smaltite, arsenide.
51. Niccolite, nickel arsenide.
52. Millerite, nickel sulphide.
53. Pyrrhotite, niccoliferous pyrite.
54. Cobaltite, sulph-arsenide.
55. Garnierite, nickel silicate.
56. Asbolite, cobalt oxide.

Aluminium.

57. Corundum (crystal), oxide.
58. Corundum, emery, oxide.
59. Cryolite, fluoride.
60. Bauxite, hydrate.

Antimony and Manganese.

61. Stibnite, antimony sulphide.
62. Wad, bog manganese.
63. Pyrolusite, oxide.
64. Psilomelane, oxide.
65. Rhodochrosite, carbonate.

Other Useful Minerals.

66. Apatite, hexagonal.
67. " phosphate rock.
68. Arsenic, native.
69. Realgar, red arsenic sulphide.
70. Orpiment, yellow arsenic sulphide.
71. Dolomite, rhombohedral.
72. Dolomite, massive.
73. Orthoclase, feldspar, monoclinic.
74. Orthoclase, feldspar, cleavage.
75. Microcline, triclinic.
76. Fluorite, cubic.
77. " massive.
78. Quartz, hexagonal.
79. Calcite, dog-tooth spar.
80. " rhombohedral cleavage.
81. Graphite, plumbago.
82. Gypsum, plaster.
83. " selenite.
84. Barite, orthorhombic.
85. Celestite.
86. Muscovite, mica.

87. Molybdenite.	99. Ozokerite.	109. Obsidian.
88. Halite, rock salt.	100. Diamond.	110. Gneiss.
89. Sulphur, native.	101. Emerald.	111. Mica schist.
90. Borax, monoclinic.	102. Topaz, orthorhombic.	112. Granite.
91. Alunite, alum stone.	103. Garnet, dodecahedral.	113. Porphyry.
92. Talc, soapstone.	104. Opal, precious.	114. Syenite.
93. Petroleum.	105. Turquoise.	115. Sandstone.
94. Anthracite coal.		116. Quartzose, conglomerate.
95. Bituminous coal.		117. Limestone, coarse.
96. Cannel coal.	<i>Rocks.</i>	118. " lithographic.
97. Elaterite, elastic bitumen.	106. Trachyte.	119. Shale.
98. Asphaltum.	107. Basalt.	120. Chloritic schist.
	108. Greenstone.	

* **No. 25. Useful Metallic and Non-Metallic Minerals.** 300 specimens, averaging $2\frac{1}{2} \times 2$ in., \$125.00. Includes various examples of all important minerals possessing economic value.

* **No. 26. Useful Metallic and Non-Metallic Minerals.** 300 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$50.00.

* **No. 27. Metallurgical Collection.** 200 specimens, averaging $2\frac{1}{2} \times 2$ in., \$75.00. Embracing all the more important ores of common, rare or precious metals.

* **No. 28. Metallurgical Collection.** 200 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$35.00.

* **No. 29. Metallurgical Collection.** 100 specimens, averaging $2\frac{1}{2} \times 2$ in., \$25.00. An abridgment of No. 27.

* **No. 30. Metallurgical Collection.** 100 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$10.00.

* **No. 31. Metallurgical Collection.** 50 specimens, $1\frac{1}{4} \times 1\frac{1}{4}$ in. Selected from the first part of *Prospectors'* list, \$4.50.

* **No. 32. Ore Associations.** 60 specimens, averaging $2\frac{1}{2} \times 2$ in., \$12.00. Including all of the minerals most commonly found with valuable ores.

* **No. 33. Ore Associations.** 60 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$5.00.

* **No. 34. Gold ores.** 10 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$10.00.

* **No. 35. Silver ores.** 15 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$7.50.

* **No. 36. Iron ores.** 50 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$7.50.

* **No. 37. Iron ores.** 25 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$2.50.

* **No. 38. Lead ores.** 25 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$6.00.

*No. 39. **Copper ores.** 25 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$5.00.

*No. 40. **Zinc ores.** 15 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$3.00.

*No. 41. **Nickel and Cobalt ores.** 15 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$4.00.

*No. 42. **Rare Elements,** ores of Ce., Pt., Ta., Th., U., V., Y., Zr., etc. 25 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$7.50.

*No. 43. **Useful Non-Metallic Minerals.** 50 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$8.00.

*No. 44. **Pharmaceutical Collection.** 175 specimens, averaging $2\frac{1}{2} \times 2$ in., \$30.00. Most important minerals employed in Pharmaceutical Technology.

*No. 45. **Pharmaceutical Collection.** 175 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$14.00.

*No. 46. **Rough Gems and Precious Stones.** 50 small specimens, in quartered oak cabinet, \$15.00.

For sets of metals and models of cut stones, see VII, Supplies.

C. MISCELLANEOUS ELEMENTARY COLLECTIONS, ILLUSTRATING VARIOUS TEXT-BOOKS.

Collections put up to order to accompany the works of other authors.

We keep on hand a supply of the common American rocks, and can furnish typical specimens, neatly trimmed to following sizes :

$3\frac{1}{2} \times 2\frac{3}{4}$ in. 25 cts.,

$2\frac{1}{2} \times 2$ in. 15 cts.,

$1\frac{1}{4} \times 1\frac{1}{4}$ in. 5 cts.,

Fragments, 3 cts.

Many common massive minerals sold at the same prices.

Put up in collections of 25 or more specimens, about 20% to 30% less. In both rocks and minerals the cost is much less when many of one kind are purchased.

The same high standard of excellence is observed in these inexpensive special sets, as with the higher priced collections. Labeled as shown in Plate IX. Lists furnished on application.

Geology.

No. 47. **Collection of Rocks.** 60 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., \$12.00. Generally from American localities.

No. 48. **Collection of Rocks.** 60 specimens, averaging $2\frac{1}{2} \times 2$ in., \$6.00.

No. 49. **Collection of Rocks.** 60 specimens, averaging, $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$2.50.

No. 50. Collection of Rock-forming Minerals. 60 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., \$12.00. Includes the most important constituents of rocks.

No. 51. Collection of Rock-forming Minerals. 60 specimens, averaging $2\frac{1}{2} \times 2$ in., \$6.00.

No. 52. Collection of Rock-forming Minerals. 60 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$2.50.

No. 53. Winchell Collection. Rocks and rock-forming minerals. 50 specimens, averaging $2\frac{1}{2} \times 2$ in., \$5.00. To accompany Winchell's *Geological Excursions*. Regularly prepared by us according to list approved by the late Prof. Winchell.

No. 54. Winchell Collection. Rocks and minerals. 50 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$2.00.

No. 55. Tarr Collection. Rocks and minerals. 75 specimens, averaging $2\frac{1}{2} \times 2$ in., \$7.50. To accompany Tarr's *Elementary Geology*, 1897.

No. 56. Tarr Collection. 75 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$3.00.

No. 57. Tarr Fragment Collection. 75 fragments, numbered to correspond to list, in cabinet, \$1.75.

No. 58. Steele Collection. Minerals, rocks and fossils. 125 specimens, averaging $2\frac{1}{2} \times 2$ in., \$20.00. To accompany Steele's *Fourteen Weeks in Geology*, according to list given in the book.

Mineralogy.

No. 59. Williams Collection. 39 specimens of minerals, averaging $2\frac{1}{2} \times 2$ in., \$5.00. To accompany Williams' *Introduction to Chemistry and Blow-pipe Analysis*, according to list in the Appendix.

No. 60. Williams Collection. 39 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$2.00.

No. 61. Moses and Parsons Collection. Minerals. 175 specimens, students' size, \$14.00. Including all the more important kinds mentioned in *Mineralogy, Crystallography and Blow-pipe Analysis*.

No. 62. Moses and Parsons Fragment Collection. 175 fragments, numbered to correspond to list, in cabinet, \$6.60.

***No. 63. Collins Collection.** 120 specimens of minerals, averaging $2\frac{1}{2} \times 2$ in., \$18.00. To accompany Collins's *A First Book of Mineralogy*.

***No. 64. Collins Collection.** 120 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$8.00.

No. 65. Dana Collection. 60 specimens of minerals, averaging $2\frac{1}{2} \times 2$ in., \$7.50. Mentioned by Prof. E. S. Dana as being the most important for the young mineralogist to have in his collection. (For a better and more extended list, recommended in Prof. Dana's *Minerals, and How to Study Them*, see SCHOOL LIST on a preceding page.

No. 66. Dana Collection. 60 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$3.00. Cabinet, 80 cts. extra.

No. 67. Dana Fragment Collection. 60 fragments, numbered to correspond to printed list, with cabinet, \$1.90. Postage, 40 cts.

No. 68. Richards Collection. Minerals and rocks. 50 specimens, averaging $2\frac{1}{2} \times 2$ in., \$6.00. Prepared to accompany any of the *Guides for Science Teaching*, treating of mineralogy and geology, such as those published by the Boston Society of Natural History. (Mrs. Richards' *First Lessons in Minerals*, and similar little books, by Crosby and by Clapp.)

No. 69. Richards Collection. 50 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$2.50.

No. 70. Richards Fragment Collection. 50 fragments, numbered to accompany list, in cabinet, \$1.50. Postage, 35 cts.

No. 71. Agassiz Collection. 25 specimens of minerals, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., \$1.50. This little set is prepared especially to interest young children. It includes only pretty specimens, showing odd forms of crystallization and bright colors; most of the kinds are used in the arts and manufactures. It is well adapted for kindergarten or primary school work. Cabinet, 50 cts. extra.

No. 72. Agassiz Fragment Collection. 25 fragments, numbered to correspond to printed list, in cabinet, 75 cts.; postage, 15 cts.

D. CRYSTALLOGRAPHY. CRYSTALS FOR THE GONIOMETER AND FOR ELEMENTARY STUDY. MICROSCOPIC CRYSTALS.

For the Goniometer and for Elementary Study.

Knowing that specimens used in the study of so exact a science as Crystallography must be of the very best, we take an especial pride in the excellence of the material selected by us to meet this demand.

These series are prepared with the single purpose of serving as working specimens in the illustration of the *Six Systems of Crystallization*. All are measurable with contact or reflecting goniometer, or both. *Two grades* of each collection are quoted. The first, styled "perfect," preferred by many teachers, are very choice specimens. There are many remarkably symmetrical and perfect crystals among them. The second are all good crystals, with sharp angles and bright planes sufficient to show the form and permit measuring. They are often smaller, and the proportion of complete crystals is lower than in the first grade.

For convenience they are put up in the polished oak compartment cabinets, as shown in Plate X, representing collection No. 79. Cabinets especially fitted with short, thick vials to hold the crystals, are substituted for the compartment pattern, at \$1.50, extra, per 100 specimens. Each crystal

(or vial) is numbered to correspond to list. Metal holders or wood stands, mounted on blocks, with large printed label, for open case display, cost about 10 cts. extra, for each specimen.

Size averages from $\frac{1}{4}$ in. to $\frac{3}{4}$ in. diameter, although larger can be arranged on order. The sets of 100 and over often include a number of distinct habits of one mineral; those of 50 and 25 are all different species.

*No. 73. Collection of 200 Perfect Crystals, \$120.00.

*No. 74. Collection of 200 Crystals, \$60.00.

*No. 75. Collection of 100 Perfect Crystals, \$60.00.

*No. 76. Collection of 100 Crystals, \$30.00.

No. 77. Collection of 50 Perfect Crystals, \$20.00.

No. 78. Collection of 50 Crystals, \$10.00. Postage, 35 cts. extra.

No. 79. Collection of 25 Perfect Crystals, \$6.00. Postage, 23 cts.

No. 80. Collection of 25 Crystals, \$3.00. Postage, 20 cts. extra.

No. 81. Special Series of Six Large Crystals, \$15.00. Showing a simple form of each of the six systems: 1, Fluorite; 2, Vesuvianite; 3, Quartz; 4, Thenardite; 5, Orthoclase; 6, Microcline. They are about three inches in diameter and form an excellent set for the lecture-room or museum.

The following is an incomplete list of our detached crystals, from which above collections are selected. The stock changes constantly, but all the common and many of the rare species can always be furnished in good crystallizations.

All are well-defined, measurable crystals, averaging $\frac{1}{4}$ in. to $\frac{3}{4}$ in. diameter. They generally cost from 10 cts. to 50 cts. each, those starred (*) bring 75 cts. to \$2.00 or \$3.00 each. Small but well terminated crystals of such minerals as Quartz, Topaz, Zircon, Dysanallyte and Gypsum can be furnished for class use at 10 cts. per dozen.

A variety of habits and types of certain species are kept in stock, which are not enumerated here.

ABBREVIATIONS.—Isom., Isometric; Tetr., Tetragonal; Hex., Hexagonal; Rhomb., Rhombohedral; Orth., Orthorhombic; Mono., Monoclinic; Tric., Triclinic; c., suitable for contact goniometer; r., suitable for reflecting goniometer.

c.r. Acmite, Mono.
r. Adamite, Orth. *
r. Albite, Tric.
c. Alexandrite, twin.
Orth.
c. * Allanite, Mono.
c.r. Amphibole, Mono.
c.r. Analcite, Isom.

c. Andalusite, Orth.
c.r. Anglesite, Orth.
c.r. Ankerite, Rhomb.
c. Anorthite, twin, Tric.
c.r. Apatite, Hex.
c.r. Apophyllite, Tetr.
c.r. Aragonite, Orth.
c.r. " twin.

c.r. Arfvedsonite, Mono.
c. * Argentite, Isom.
c.r. Arsenopyrite, Orth.
c.r. " twin.
c.r. Axinite, Tric.
c.r. Azurite, Mono.
c.r. Barite, Orth.
c.r. Beryl, Hex.

- | | | |
|--------------------------|-----------------------------|---------------------------|
| r. Beryllonite, Orth. | r. Göthite, Orth. | r. Pyrolusite, Orth. |
| c.r. Biotite, Mono. | c.r. Gypsum, Mono. | c.r. Pyromorphite, Hex. |
| r. Boracite, Isom. | c.r. " twin. | c. * Pyrosmalite, Rhomb. |
| c. Borax, Mono. | c. Halite, Isom. | c.r. Pyroxene, Mono. |
| r. Bournonite, twin, | c. Hanksite, Hex. | c. " twin. |
| Orth. | r. Harmotome, twin, | r. Pyrrhotite, Hex. |
| r. Brandtite, Tric. | Mono. | c.r. Quartz, Rhomb. |
| r. Bromlite, Orth. | c. Hauerite, Isom. | c. " twin. |
| c.r. Brookite, Orth. | c.r. Hematite, Rhomb. | r. Realgar, Mono. |
| r.* Brucite, Rhomb. | c.r.* Herderite, Orth. | c.r. Rhodochrosite, |
| r. Calamine, Orth. | c.r. Heulandite, twin, | Rhomb. |
| c.r. Calcite, Rhomb. | Mono. | c.r. Rhodonite, Tric. |
| c.r. " twin. | c.r. Ilvaite, Orth. | c.r. Rutile, Tetr. |
| c.r. Celestite, Orth. | c.r. Keilhauite, Mono. | c. " twin. |
| r. Cerussite, Orth. | r. Laumontite, Mono. | c.r. Scheelite, Tetr. |
| c.r. Chabazite, Rhomb. | r.* Laurionite, Orth. | r. Scolecite, Mono. |
| r. Chalcocite, Orth. | c. Lazulite, Mono. | r. Scorodite, Orth. |
| r. Chalcopyrite, Tetr. | c.r. Leadhillite, twin, | r. Senarmontite, Isom. |
| c. Chesterite, Tric. | Mono. | c.r. Siderite, Rhomb. |
| c.r. Chondrodite, Mono. | c. Leucite, Isom. | r.* Smaltite, Isom. |
| c.r. Chrysoberyl, twin, | r. Libethenite, Orth. | r. Smithsonite, Rhomb. |
| Orth. | r. Linarite, Mono. | c.r. Sphalerite, Isom. |
| r. Chrysolite, Orth. | r.* Liroconite, Mono. | c.r. Spinel, Isom. |
| r. Cinnabar, Rhomb. | c.r. Magnesioferrite, Isom. | c.r. " twin. |
| c. Cleveite, Isom. | c.r. Magnetite, Isom. | c. Spodumene, Mono. |
| c.r. Clinocllore, twin, | r. Manganite, Orth. | c. Staurolite, Orth. |
| Mono. | r. Marcasite, twin, Orth. | c. " twin. |
| c.r. Cobaltite, Isom. | r. Matlockite, Tetr. | r. Stephanite, Orth. |
| c.r. Colemanite, Mono. | c.r. Martite, Isom. | c.r. Stibnite, Orth. |
| c. Columbite, Orth. | r.* Mazapilite, Orth. | c. Strontianite, twin, |
| c. Copper, Isom. | r. Meionite, Tetr. | Orth. |
| c.r. Corundum, Rhomb. | c.r. Mellite, Tetr. | c. Struvite, twin, Orth. |
| r.* Crocoite, Mono. | r. Meneghinite, Orth. | c.r. Sulphur, Orth. |
| r.* Cryolite, Mono. | c. Microcline, Tric. | r. Tetrahedrite, Tetr. |
| r. Cuprite, Isom. | c. " twin. | c. Thenardite, Mono. |
| c.r. Danburite, Orth. | c.r.* Microlite, Isom. | c. " twin. |
| r. Datolite, Mono. | c. Molybdenite, Hex. | r. Thomsenolite, Mono. |
| r.* Diamond, Isom. | c. Monazite, Mono. | c. Thorite, Tetr. |
| r.* Diaspore, Orth. | c.r. Monticellite, Orth. | c.r. Titanite, Mono. |
| r. Diopside, Rhomb. | c.r. Muscovite, Hex. | c. " twin. |
| c.r. Dolomite, Rhomb. | r. Natrolite, Orth. | c.r. Topaz, Orth. |
| r. Durangite, Mono. | r. Newberyite, Orth. | r. Torbernite, Tetr. |
| c.r. Dysanallyte, Isom. | r. Octahedrite, Tetr. | c.r. Tourmaline, Rhomb. |
| c.r.* Edingtonite, Tetr. | r. Olivenite, Orth. | c. Troostite, Rhomb. |
| c.r. Endlichite, Hex. | r. Orpiment, Orth. | c.r. Ullmanite, Isom. |
| c. Enstatite, Orth. | c.r. Orthoclase, Mono. | c.r. Vanadinite, Hex. |
| r.* Epistilbite, Mono. | c. " twin. | c.r. Vesuvianite, Tetr. |
| r. Euchroite, Orth. | r. Pachnolite, Mono. | r. Vivianite, Mono. |
| c.r. Eudialyte, Rhomb. | r. Pectolite, Mono. | c. * Wagnerite, Mono. |
| c.r. Eudidymite, Mono. | r. Penninite, twin, Mono. | c. Wernerite, Tetr. |
| r. Euxenite, Orth. | c.r. Perovskite, Isom. | c. Witherite, twin, Orth. |
| c.r. Fluorite, Isom. | c.r. Phenacite, Rhomb. | c.r. Wolframite, Mono. |
| c.r. Franklinite, Isom. | r. Phillipsite, twin, | c. Wollastonite, Mono. |
| c.r. Gahnite, Isom. | Mono. | c.r. Wulfenite, Tetr. |
| c.r. Galena, Isom. | c.r. Phosgenite, Tetr. | c.r. Xenotime, Tetr. |
| c. Gay-Lussite, Mono. | c. Pinite, Mono. | c.r. Zircon, Tetr. |
| c. Glauberite, Mono. | c. Prehnite, Orth. | c. " twin. |
| c.r. Glauco-dot, Orth. | r. Pyrargyrite, Rhomb. | r. Zoisite, Orth. |
| c.r. Gmelinite, twin, | c.r. Pyrite, Isom. | r. Zunyite, Isom. |
| Rhomb. | c. " twin. | |

PSEUDOMORPHS.

Unless marked "r" or "c," they are not measureable; many are matrix specimens.

* Gold	{ pseudo. } after	Sylvanite.	Dolomite { pseudo. } after	Calcite.
Copper	"	Azurite.	"	Malacolite.
Galena	"	Pyromorphite.	Siderite	Dolomite.
c. Chalcocite	"	Chalcopyrite.	Smithsonite	Calcite.
Chalcopyrite	"	Siderite.	Cerussite	Calcite.
Pyrite	"	Fluorite.	"	Barite.
* "	"	Calcite.	c.r. Malachite	Cuprite.
Marcasite	"	Fluorite.	r. *	"
Hagemannite	"	Cryolite.	Nesquehonite	Lansfordite.
Quartz	"	Fluorite.	Pseudoleucite.	
"	"	Crocidolite.	c. Amphibole	Pyroxene.
c. "	"	Calcite.	Calamine	Galena.
"	"	Dolomite.	Analcite	Copper.
"	"	Pyroxene.	Muscovite	Nephelite.
"	"	Wollastonite.	c.r. Prochlorite	Garnet.
"	"	Pectolite.	c. Serpentine	Enstatite.
"	"	Coral (Beckite)	* "	Chrysolite.
"	"	Barite.	"	Pyroxene.
Thinolite	"	Gay-Lussite.	"	Feldspar.
r. Hematite	"	Siderite.	c. * Talc	Tremolite.
"	"	Pyrite.	c. "	Pyroxene.
"	"	Calcite.	"	Epidote.
"	"	Ilvaite.	r. *	Chondrodite.
Spinel	"	Corundum.	* Allophane	Azurite.
c.r. Rutile	"	Brookite.	* Mimetite	Anglesite.
"	"	Hematite.	* Adamite	Azurite.
Diaspore	"	Margarite.	Lesleyite	Corundum.
c.r. Limonite	"	Pyrite.	Uranotil	Uraninite.
c. "	"	Siderite.	* Anglesite	Galena.
"	"	Breunnerite.	* "	Cerussite.
c. * Wad	"	Siderite.	* "	Matlockite.
c. * Calcite	"	Quartz.	Leadhillite	Galena.
c. "	"	Aragonite.	"	Calcite.
c. "	"	Hanksite.	c.r. Wolframite	Scheelite.
* "	"	Strontianite.		

Groups of Microscopic Crystals as Box-Mounts.

The increasing popularity and wide application of the microscope is attested by the demand we find for this class of specimens. They make inexpensive mounts, surprising and delighting the student by the wonderful beauty of crystallization revealed by the lens.

The following list mentions the most desirable minerals in stock; the minute crystals are grouped on small pieces of gangue, which can be broken to convenient size for mounting. Selected specimens can generally be furnished at 15 cts. each, those starred (*) at 25 cts. to \$1.00 each, according to rarity. All are carefully labelled.

Minerals mentioned in italics are of unusual beauty and value for microscopic examination. It is from these that the following collections are carefully selected:

Adamite, green.	*Allactite.	Amphibole, Vesuvius.
Aegirite.	Alunite.	<i>Amphibole var. Byssolite.</i>
*Aguilarite.	Amphibole var. Breislakite.	<i>Analcite.</i>
Albite.		<i>Analcite, Australia.</i>

- Anglesite*.
Anglesite, Australia.
Anorthite, Vesuvius.
Apophyllite.
Aragonite.
Atacamite, Chile.
Aurichalcite.
Autunite.
Axinite, Switzerland.
 **Axinite*, New Jersey.
Azurite.
Azurite, Australia.
Biotite, Vesuvius.
Boléite.
Boracite.
Brandite.
 **Breithauptite*.
Brochantite.
Bromlite (Alstonite).
Brookite.
 **Brucite*.
Cacoxenite.
Calamine.
Calcite.
 **Caledonite*.
 **Calomel*.
Cassiterite, England.
Cassiterite, Mexico.
Celestite.
Cerargyrite.
Cerussite.
Chabazite.
Chalcocite.
Chalcophanite.
Chalcophyllite.
Chalcopyrite, Pa.
Chalcopyrite on blende.
Chalcopyrite on pearl spar.
Chalcocisiderite.
 **Childrenite*.
Chondrodite, Vesuvius.
Cinnabar.
Clinoclasite.
Conichalcite.
Copper.
Copper (arborescent), Aust.
Cryolite.
 **Cumengéite*.
 **Cumengéite*, trilling.
 **Cumengéite*, truncated trilling.
Cuprite.
Cuprite var. *Chalcotrichite*.
Datolite.
Descloizite.
Descloizite var. *Cuprodescloizite*.
 **Diaspore*.
 **Diopside*.
 **Diopside*, in Quartz.
Dolomite.
Embolite on *Limonite*, Aust.
 **Endlichite*, different forms and colors.
Epidote, green.
Epidote, gray.
Erinite.
 **Erythrite*.
Euchroite.
 **Eulytite*.
Gahnite.
Garnet var. *Essonite*.
Garnet var. *Melanite*.
Garnet var. *Ouvarovite*.
 **Garnet* var. *Topazolite*.
 **Gmelinite*, Australia.
 **Gold*.
 **Greenockite*.
 **Guarinite*.
Gypsum.
Harmotome.
 **Haüynite*, Vesuvius.
Hematite, Elba.
Hematite, England.
Hematite, Mt. Etna.
 **Herregrundite*.
Heulandite.
Jamesonite, var. *Heteromorphite*.
Jarosite.
 **Långbanite*.
 **Langite*.
 **Lanthanite*.
Laumontite.
Laurionite.
Lawsonite.
Libethenite.
 **Linarite*, Australia.
 **Liroconite*.
Magnetite.
Malachite.
Manganite.
Marcasite.
Marcasite in *Calcite*.
Melanophlogite.
Meneghinite.
Mercury.
Mesolite.
Mesolite, Australia.
 **Metacinnabarite*.
Millerite, Pa.
Millerite, in *Calcite*, Mo.
Mimetite.
Mixite.
Nadorite.
Natrolite.
Natrolite, Australia.
Nephelite, Vesuvius.
 **Newberyite*, Australia.
 **Octahedrite* (*Anatase*).
Offréite.
Oligoclase, var. *Sunstone*.
Olivenite.
Opal, with enclosure.
Orpiment.
Orthoclase, var. *Sanadin*.
Pachnolite.
Pectolite.
Penninite.
Perthite (*Sunstone*).
 **Phacolite*, Australia.
Pharmacosiderite.
Phenacite.
Phillipsite.
 **Phillipsite*, Australia.
 **Phillipsite* on acicular *Calcite*, Australia.
Phosgenite.
 **Piedmontite*.
Polybasite.
 **Proustite*.
 **Pucherite*.
 **Pyrrargyrite*.
Pyrite, New Jersey.
Pyrite, Pennsylvania.
Pyrolusite.
 **Pyromorphite* (Aust.) brown.
Pyromorphite (Ger.) brown.
Pyromorphite (Pa.) green.
Pyroxene, Vesuvius.
Pyrrhotite.
Quartz.
 **Quartz*, cont. *Albite*.
Quartz, cont. *Chlorite*.
Quartz, cont. *Hematite*.
 **Quartz*, cont. *Pyrophyllite*.
Quartz, cont. *Rutile*.
Ralstonite.
Realgar.
 **Remingtonite*.
Rhodonite, var. *Paisbergite*.
 **Roselite*.
Rutile.
Sarkinite.
Scorodite.
Senarmontite.
Serpierite.
Siderite.
Silver, wire.
 **Silver*, cryst.
Smithsonite.
Sodalite, Vesuvius.
 **Sphaerocobaltite*.
 **Sphaerostilbite*, Australia.
Sphalerite.
Sphalerite, var. *Ruby Blende*.
Spinel, Vesuvius.
 **Stephanite*.
Stibnite.
Stilbite, New Jersey.
Stilbite, Oregon.
Sulphur, California.
Sulphur, Sicily.
Svabite.
 **Sylvanite*.
Tennantite.
Tenorite.
Thaumasite.
Thomsonolite.
Thomsonite.
Titanite.
Topaz, enclosing *Quartz*.

Topaz, enclosing Hema- tite.	Vanadinite, brown.	Wavellite, green.
Torbernite.	Vanadinite, red.	Wavellite, white.
*Tridymite.	Variscite.	Wulfenite, red, Arizona.
Tyrolite.	Vesuvianite.	Wulfenite, red, Pa.
Ulexite.	Vivianite.	Wulfenite, yellow.
Valentinite.	*Vivianite, Australia.	Zircon.

*No. 82. Collection of 100 Microscopic Minerals, \$18.00. In polished oak cabinet.

*No. 83. Collection of 100 Microscopic Minerals, \$25.00. The preceding, mounted in black boxes.

*No. 84. Collection of 50 Microscopic Minerals, \$8.00. In polished oak cabinet.

*No. 85. Collection of 50 Microscopic Minerals, \$12.00. The preceding, mounted in black boxes.

No. 86. Collection of 25 Microscopic Minerals, \$4.00. In polished oak cabinet.

No. 87. Collection of 25 Microscopic Minerals, \$6.00. The preceding, mounted in black boxes.

E. SERIES ILLUSTRATING THE HARDNESS, COLOR, SPECIFIC GRAVITY AND OTHER PHYSICAL CHARACTERS OF MINERALS.

In preparing these sets, every care is taken to secure exact representatives of the different physical properties illustrated. They are put up in specimens neatly trimmed to two principal sizes.

First.—For the private collector, museum or school, in show specimens averaging $3\frac{1}{2} \times 2\frac{3}{4}$ inches, mounted on polished oak (or cherry) blocks, as shown in Plate IX, with large printed label, mentioning the particular property or form shown by the specimen with name, composition and locality.

Second.—Students' specimens for practical work, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ inches and labeled like the larger size. Arranged in polished quartered oak compartment cabinet, as shown in Plate X.

All are kept in stock, prepared and ready for shipment immediately on receipt of order.

No. 88. Structure Series. 25 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$12.00. Various forms of columnar, lamellar and granular structures; also imitative shapes.

No. 89. Structure Series. 25 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in. Like No. 88. In compartment cabinet, \$4.00.

No. 90. Cleavage and Fracture Series. 12 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$5.00.

(a) Cleavage ;

1. *Basal*,3. *Cubic*,5. *Dodecahedral*,2. *Prismatic*,4. *Octahedral*,6. *Rhomboderal*.

(b) Fracture ;

7. *Conchoidal*,9. *Uneven*,11. *Earthy*,8. *Even*,10. *Hackly*,12. *Splindery*.

No. 91. Cleavage and Fracture Series. 12 specimens, like preceding, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, \$1.50.

No. 92. Hardness Series. 12 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$8.00. According to Mohs' scale ; all but first crystallized :

1. Talc,

5. Apatite,

8. Topaz,

2. Gypsum,

6. Feldspar,

9. Corundum,

3. Calcite,

7. Quartz,

10. Diamond.

4. Fluorite,

With lodestone (for magnetism), honestone (for streak) and file for testing hardness.

No. 93. Hardness Series. 12 specimens, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., like preceding, in compartment cabinet, \$1.75 ; postage, 34 cts.

No. 94. Hardness Series. Same as No. 93, without diamond, \$1.00 ; postage, 34 cts.

No. 95. Tenacity Series. 5 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$2.50.

1. *Brittle*,3. *Malleable*,5. *Elastic*.2. *Sectile*,4. *Flexible*,

No. 96. Tenacity Series. 5 specimens like above, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, 75 cts.

No. 97. Specific Gravity Series. 25 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$25.00. Arranged to show even gradations of density from minerals of very low to very high specific gravity. Pure, crystalline minerals are selected.

No. 98. Specific Gravity Series. 25 specimens like above, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, \$7.00.

NOTE.—For sets of metals cut in strips of different lengths, according to density, see VII, Supplies.

No. 99. Diaphaneity Series. 5 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$2.00.

1. *Transparent*,3. *Translucent*,5. *Opaque*.2. *Semi-transparent*,4. *Semi-translucent*,

No. 100. Diaphaneity Series. 5 specimens like above, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, 60 cts.

No. 101. Color Series. 60 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$30.00. According to following table, embracing all the more essential variations. It makes an exceedingly handsome and attractive set.

a. Metallic Colors.

1. *Copper-red.*
2. *Bronze-yellow.*
3. *Brass-yellow.*
4. *Gold-yellow.*
5. *Silver-white.*
6. *Tin-white.*
7. *Lead-gray.*
8. *Steel-gray.*

b. Non-metallic Colors.

White.

9. *Snow-white.*
10. *Reddish-white.*
11. *Yellowish-white.*
12. *Grayish-white.*
13. *Greenish-white.*
14. *Milk-white.*

Gray.

15. *Bluish-gray.*
16. *Pearl-gray.*
17. *Greenish-gray.*
18. *Yellowish-gray.*
19. *Ash-gray.*

Black.

20. *Velvet-black.*
21. *Greenish-black.*
22. *Brownish-black.*
23. *Bluish-black.*

Blue.

24. *Azure-blue.*
25. *Violet-blue.*
26. *Prussian-blue.*
27. *Indigo-blue.*

Green.

28. *Verdigris-green.*
29. *Leek-green.*
30. *Emerald-green.*
31. *Apple-green.*
32. *Grass-green.*
33. *Pistachio-green.*
34. *Olive-green.*

Yellow.

35. *Sulphur-yellow.*
36. *Straw-yellow.*
37. *Honey-yellow.*
38. *Lemon-yellow.*
39. *Ochre-yellow.*

40. *Cream-yellow.*
41. *Orange-yellow.*

Red.

42. *Hyacinth-red.*
43. *Brick-red.*
44. *Scarlet-red.*
45. *Flesh-red.*
46. *Carmine-red.*
47. *Rose-red.*
48. *Crimson-red.*
49. *Peach-blossom-red.*
50. *Cherry-red.*

Brown.

51. *Reddish-brown.*
52. *Clove-brown.*
53. *Chestnut-brown.*
54. *Yellowish brown.*
55. *Liver-brown.*

c. Color Phenomena.

56. *Chatoyancy.*
57. *Opalescence.*
58. *Iridescence.*
59. *Phosphorescence.*
60. *Pleochroism.*

No. 102. Color Series. 60 specimens, arranged according to above table, averaging $1\frac{1}{4} \times \frac{1}{4}$ in., in compartment cabinet, \$10.00.

No. 103. Color Series. 25 specimens, selected from above table, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$12.00.

No. 104. Color Series. 25 specimens, like preceding, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, \$4.00.

No. 105. Lustre Series. 15 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$8.00.

(a) *Kinds of lustre;*

- | | | |
|--------------------------------|-------------------------|----------------------------|
| 1. <i>Metallic,</i> | 5. <i>Vitreous,</i> | 9. <i>Metallic-pearly,</i> |
| 2. <i>Sub-metallic,</i> | 6. <i>Sub-vitreous,</i> | 10. <i>Silky,</i> |
| 3. <i>Adamantine,</i> | 7. <i>Resinous,</i> | 11. <i>Dull.</i> |
| 4. <i>Metallic-adamantine,</i> | 8. <i>Pearly,</i> | |

(b) *Degrees of intensity;*

- | | | |
|-----------------------|------------------------|------------------------|
| 12. <i>Splendent,</i> | 14. <i>Glistening,</i> | 15. <i>Glimmering.</i> |
| 13. <i>Shining,</i> | | |

No. 106. Lustre Series. 15 specimens, like above, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, \$3.00.

No. 107. Taste and Odor Series. 12 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$4.00.

No. 108. Taste and Odor Series. 12 specimens, like preceding, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, \$1.25.

No. 109. Fusibility Series. 6 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in., on blocks, \$2.00.

1. Stibnite,
2. Natrolite,

3. Almandite,
4. Actinolite,

5. Orthoclase.
6. Bronzite.

No. 110. Fusibility Series. 6 specimens, as above, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, 60 cts.; postage, 17 cts.

No. 111. Complete Physical Series. Includes all of the foregoing series: Structure, 25; Cleavage and Fracture, 12; Hardness, 12; Tenacity, 5; Specific Gravity, 25; Diaphaneity, 5; Color, 60; Lustre, 15; Taste and Odor, 12; Fusibility, 6; total, 177 specimens, averaging $3\frac{1}{2} \times 2\frac{3}{4}$ in. Either mounted on blocks or in quartered oak drawer cabinet. An invaluable aid to a proper understanding of this important chapter of mineralogy and indispensable in a thorough course of study, \$90.00.

No. 112. Complete Physical Series. 177 specimens, like preceding, averaging $1\frac{1}{4} \times 1\frac{1}{4}$ in., in compartment cabinet, \$30.00.

F. SETS OF MINERALS FOR BLOWPIPE PRACTICE AND CHEMICAL ANALYSIS.

The minerals used in the following series are as nearly chemically pure as they occur in nature, and are all typical examples of distinct species. To meet an increasing demand, they are prepared in three forms:

First.—Good-sized pieces put up in six-ounce wide mouth, glass-stoppered bottles, holding about one-half to one pound of each mineral. Labeled with large printed label, giving name, composition and locality.

Second.—About one ounce of each mineral in strong glass vials, fitting neatly into a quartered oak cabinet, made especially to hold 100 vials. Each vial is numbered to correspond to list.

Third.—Specimens averaging $\frac{3}{4}$ in. diameter, weighing about two-fifths of an ounce, numbered to correspond to list; in quartered oak compartment cabinet. All the following are kept in stock, prepared and ready for shipment immediately on receipt of order:

No. 113. Advanced Blowpipe Collection. 300 minerals in 6-oz. bottles, \$100.00. Selected mostly from the University Collection List. Common varieties based on chemical variation, and some rare species are illustrated. Can be arranged to include such minerals as are required by purchaser.

No. 114. Advanced Blowpipe Collection. 300 specimens, duplicates of above, in small vials, fitted in special cabinet, \$20.00.

No. 115. Advanced Blowpipe Collection. 300 small minerals, like preceding, in compartment cabinet, \$14.00.

No. 116. Advanced Blowpipe Collection. 200 important mineral species, in 6-oz. bottles, \$60.00. Selected from the University Col-

lection List. Can generally be arranged to include such minerals as are required by purchaser.

No. 117. Advanced Blowpipe Collection. 200 different mineral species, like above, in small vials, fitted in special cabinet, \$14.00.

No. 118. Advanced Blowpipe Collection. 200 different mineral species. Small specimens in compartment cabinet, \$8.00.

No. 119. Elementary Blowpipe Collection. 100 different mineral species, in 6-oz. bottles, \$35.00. According to following list, arranged to include all of the kinds commonly taken up in a short course. The names not starred (*) include all minerals most essential in elementary practice, and are especially recommended in the works of Von Kobell, Brush or Dana.

List of Elementary Blowpipe Collection. 100 Specimens.

- | | | |
|---------------------|--------------------|------------------------------|
| <i>Arsenic.</i> | 32. Siderite. | <i>Strontium.</i> |
| 1. Realgar. | *33. Ilmenite. | 66. Strontianite. |
| 2. Orpiment. | *34. Vivianite. | 67. Celestite. |
| <i>Antimony.</i> | <i>Nickel.</i> | <i>Sodium and Potassium.</i> |
| 3. Stibnite. | 35. Millerite. | *68. Halite. |
| <i>Molybdenum.</i> | 36. Niccolite. | *69. Colemanite. |
| 4. Molybdenite. | *37. Garnierite. | 70. Borax. |
| <i>Silver.</i> | <i>Cobalt.</i> | *71. Carnallite. |
| 5. Embolite. | 38. Smaltite. | <i>Oxide of Silicon.</i> |
| *6. Stephanite. | 39. Cobaltite. | *72. Quartz. |
| <i>Mercury.</i> | <i>Manganese.</i> | <i>Silicates.</i> |
| 7. Cinnabar. | 40. Pyrolusite. | 73. Orthoclase. |
| <i>Copper.</i> | 41. Psilomelane. | *74. Albite. |
| 8. Chalcocite. | 42. Rhodochrosite. | *75. Enstatite. |
| 9. Bornite. | 43. Rhodonite. | *76. Pyroxene. |
| 10. Chalcopyrite. | 44. Manganite. | 77. Wollastonite. |
| 11. Tetrahedrite. | <i>Zinc.</i> | 78. Amphibole, Actinolite. |
| 12. Cuprite. | 45. Sphalerite. | *79. Beryl. |
| 13. Malachite. | *46. Zincite. | *80. Nephelite. |
| *14. Azurite. | 47. Calamine. | 81. Garnet, Almandite. |
| 15. Atacamite. | 48. Smithsonite. | 82. Lepidolite. |
| <i>Lead.</i> | *49. Willemite. | *83. Clinocllore. |
| 16. Galena. | <i>Aluminium.</i> | *84. Chrysolite. |
| *17. Bournonite. | 50. Corundum. | *85. Zircon. |
| 18. Pyromorphite. | *51. Bauxite. | *86. Wernerite. |
| 19. Vanadinite. | 52. Cryolite. | *87. Epidote. |
| 20. Cerussite. | *53. Wavellite. | 88. Tourmaline. |
| 21. Wulfenite. | *54. Kaolin. | *89. Topaz. |
| <i>Tin.</i> | 55. Alunite. | 90. Talc. |
| 22. Cassiterite. | <i>Calcium.</i> | *91. Serpentine. |
| <i>Titanium.</i> | 56. Fluorite. | 92. Datolite. |
| 23. Rutile. | 57. Calcite. | 93. Apophyllite. |
| <i>Iron.</i> | 58. Apatite. | 94. Pectolite. |
| 24. Pyrrhotite. | 59. Anhydrite. | 95. Natrolite. |
| 25. Pyrite. | 60. Gypsum. | *96. Stilbite. |
| 26. Arsenopyrite. | 61. Brucite. | <i>Niobium.</i> |
| 27. Hematite. | 62. Magnesite. | *97. Columbite. |
| 28. Magnetite. | 63. Dolomite. | <i>Uranium.</i> |
| *29. Franklinitite. | <i>Barium.</i> | 98. Uraninite. |
| 30. Chromite. | 64. Barite. | <i>Tungsten.</i> |
| 31. Limonite. | 65. Witherite. | 99. Wolframite. |
| | | 100. Scheelite. |

No. 120. Elementary Blowpipe Collection. 100 different mineral species, in small glass vials, fitted in special cabinet, \$7.50. Numbered according to above list.

No. 121. Elementary Blowpipe Collection. 100 different mineral species in small specimens. Compartment cabinet, \$4.50. Numbered according to above list.

No. 122. Elementary Blowpipe Collection. 70 different mineral species, in 6-oz. bottles, \$30.00. Recommended as most essential, by Von Kobell, Brush or Dana. Above list, omitting starred names.

No. 123. Elementary Blowpipe Collection. 70 minerals, in small vials, fitted in special cabinet, \$6.50. According to above list, omitting starred names.

No. 124. Elementary Blowpipe Collection. 70 minerals. Small specimens in compartment case, \$3.50. Above list, omitting starred names.

No. 125. Blowpipe Set. 35 minerals, in glass bottles, \$12.50. A very limited number of specimens required in a few of the principal tests. Can be used with elementary books for beginners, giving but a short chapter on blowpiping. (According to list given in appendix of Dana's *Minerals, and How to Study Them.*)

No. 126. Beginners' Blowpipe Set. 35 small specimens, like No. 125, in compartment cabinet, \$1.50; postage, 20 cts.

For minerals sold singly, by the pound, see following pages.

No. 1.—$4\frac{3}{4} \times 3\frac{1}{2}$ in. (about 12x9 cm., weighing when packed about 2 lbs.).	
No. 2.—$3\frac{1}{2} \times 2\frac{3}{4}$ in. (about 9x7 cm., weighing when packed, about $\frac{7}{8}$ lb.).	
No. 3.—$2\frac{1}{2} \times 2$ in. (about 7x5 cm., weighing when packed, about $\frac{3}{8}$ lb.).	
No. 4.—$1\frac{1}{4} \times 1\frac{1}{4}$ in. (about 3x3 cm. weighing when packed, about $\frac{1}{8}$ lb.).	

Standard collections are selected in specimens of four sizes as above. They are *average*, many of the specimens ranging $\frac{1}{2}$ in. larger.

No. 1.— $4\frac{3}{4} \times 3\frac{1}{2}$ in. is intended for institutions wishing to make an attractive and showy display in glass cases. Special attention is given to large and striking crystallizations and bright colors in the common minerals, and in all cases to the securing of the most typical examples obtainable.

No. 2.— $3\frac{1}{2} \times 2\frac{3}{4}$ in. is for practical purposes, as useful as No. 1, and not only makes a good showing in open case or drawer, but is the best working size.

No. 3.— $2\frac{1}{2} \times 2$ in. is intended for students and professional men and makes a convenient and light hand specimen. It is a size often selected by teachers for class use, where economy of space and funds are necessary.

No. 4.— $1\frac{1}{4} \times 1\frac{1}{4}$ in. is an inexpensive specimen for students, prospectors, or those desiring a sample barely large enough to show the characteristics of the mineral, and has the advantage of being portable in the small compartment cabinets. The proportion of good crystallizations is smaller than in the larger size.

Fragments, for blow-pipe practice, or in pupils' sets to accompany school collections, are of irregular shape and average about $\frac{3}{4}$ in. diameter. They weigh about 4 lbs. per 100 ready for mailing in compartment cabinets.

Quantities of the common minerals in small sizes at special rates.

Pasteboard Trays (see VII, Supplies) to fit above sizes. Also compartment and drawer cabinets and cases.

III.

MINERALS SOLD BY WEIGHT

FOR USE IN

CHEMICAL AND TECHNICAL LABORATORIES.

POUND LIST.

(For collections of minerals for blowpipe practice, see preceding pages.)

The constant and increasing demand for this class of mineralogical material, necessitated including in the following list all minerals required in blowpipe practice or wet analysis, as well as rare compounds demanded in expert technical work. Quotations can be furnished on many minerals in stock not mentioned here.

CHEMICAL NAMES are given in detail in the Metallic Classification at the end of the *Complete Mineral Catalogue*. Under each important metal are arranged the different minerals in which it occurs, in the order of percentage—*e. g.*, Cerium,— —Silicate;—Cerite, Mosandrite, Johnstrupite, Allanite. The various combinations of each metal make sub-headings. These new tables will be found useful to both students and investigators.

PRICES have in many cases been lowered, and will vary slightly from time to time according to the supply. They are quoted per pound avoirdupois. One-half pound will be sold *pro rata*, ten cents being the minimum charge. Minerals quoted at 5 cents are 10 cents per lb. for less than five lbs.

LARGE QUANTITIES at lower rates. The following are sold in 100 to 200 lb. lots at 3 cents per lb.: Arsenopyrite, Barite, Bauxite, Calcite (various), Chromite, Emery, Fluorite, Gypsum (various), Lepidolite, Limonite, Magnesite, Magnetite, Orthoclase, Phosphate Rock, Psilomelane, Pyrite, Quartz (various), Siderite. Prices of other economic minerals on application.

QUALITY.—Minerals are selected pure, or nearly so, except in the few instances where the approximate % of pure mineral in gangue is noted. Each package is accurately labeled with printed label, giving name, composition and locality. These minerals are all in stock, and can be shipped immediately on receipt of order.

1 Kilogram (K)=about 2.2 pounds avoirdupois; 30 grams (Gr.)=about 1. ounce avoirdupois.

	Per lb. \$ cts.		Per lb. \$ cts.
Actinolite,	\$0 05	Bischofite,	\$0 75
Aegirite,	1 50	Bismuth, native, per oz., 35c.	
Agate, banded, Brazil,	25	Bismuthinite, per oz., 75c.	
“ moss, Wyoming,	50	Bituminous Coal (iridescent),	05
Alabandite, 15%,	35	Blende,	10
Alabaster, Italy,	15	Boleite, per gr., 25c.	
Albertite,	15	Borax,	25
Albite,	05	Bornite,	50
Allanite (Orthite),	15	Boulangerite,	1 25
Allemontite,	1 25	Bournonite, per oz., 35c.	
Almandite,	15	Braunite, 75%, Sweden,	35
Alunite,	25	Breithauptite,	1 25
Amarantite, per oz., \$1.00.		Brochantite, per oz., 25c.	
Amazon Stone,	15	Bronzite,	25
Amber,	2 00	Brookite, Arkansite,	1 25
Amblygonite,	50	Brucite,	75
Amethyst, Ger.,	35	Buhrstone,	05
Amphibole, Actinolite,	05	Cairngorm Stone,	10
“ Asbestos,	15	Calamine,	15
“ Edenite,	10	Calcite, Ordinary Calc Spar,	05
“ Hexagonite,	50	“ blue,	15
“ Hornblende,	05	“ Chalk,	05
“ Tremolite,	25	“ cleavable, Mo.,	10
Analcite,	2 00	“ Iceland Spar, Mo.,	1 00
Andalusite,	1 50	“ “ flawless, Iceland, 2 00	
Anglesite,	1 00	“ “ large flawless pieces	
Anhydrite, N. B.,	10	“ for optical work, Iceland, 4 00	
“ Germany,	35	“ Limestone,	05
Annabergite,	2 50	“ Lithographic Limestone,	05
Anorthite, xls., per. oz., \$1.00.		“ Marble,	05
Anthophyllite,	20	“ Mexican Onyx,	15
Anthracite Coal,	05	“ Oölite,	05
Antimony, native,	1 50	“ Travertine,	05
Apatite, Canada,	05	“ red or orange,	25
“ Phosphate Rock, Fla. or S. C.,	05	Calc Spar,	05
Apophyllite,	1 25	Cancrinite, 15%,	25
Aquacryptite,	50	Cannel Coal,	05
Aquamarine, per oz., 50c.		Carnallite,	35
Aragonite,	20	Cassiterite, “Stream Tin,” S. D.,	25
Argentite, per oz., \$1.50.		“ “ Wood Tin,” Mexico,	50
Argyrodite, per gr., 35c.		Celestite,	10
Arkansite,	1 25	Cerargyrite, per oz., 50c.	
Arsenic, native,	1 50	Cerite,	1 00
Arseniosiderite,	2 50	Cerussite,	50
Arsenopyrite,	15	Chabazite,	1 00
Asbestos,	15	Chalcedony,	25
Asphaltum,	05	Chalcocite,	50
Astrophyllite, 20%,	35	Chalcophanite,	75
Atacamite, 25%,	75	Chalcopyrite,	15
Augite, xls.,	50	Chalk,	05
Axinite,	1 50	Chert or Buhrstone,	05
Azurite,	50	Chloanthite,	1 50
Barite, massive,	05	Chlorastrolite, per oz., 50c.	
“ fetid, granular,	15	Chlorite,	05
Barytocalcite,	50	Chloritoid (Masonite),	50
Bastnäsite, per oz., \$4.00.		Chlorophyllite, N. H.,	15
Bauxite, Ga. or France,	10	Chondrodite,	1 50
Berthierite,	2 00	Chromite,	10
Beryl, opaque,	10	Chrysoberyl, per oz., 2.00.	
“ Aquamarine, per oz., 50c.		Chrysocolla,	1 00
“ Emerald, xls., per oz., 75c.		Chrysolite (Olivine),	15
Beryllonite, xls., per oz.,	2 50	Chrysotile,	35
Biote,	25	Cinnabar, Cal.,	1 00

POUND LIST.

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	Per lb. \$ cts.		Per lb. \$ cts.
Cinnabar, Servia, 5%,	\$0 20	Epidote, gray,	\$0 35
Citrine,	1 00	Erythrite, per oz., 35c.	
Clausthalite, per oz., 75c.		Eudialyte,	3 00
Clinochlore (Ripidolite),	50	Euxenite,	3 50
Coal, Anthracite,	05	Feldspar,	05
“ Bituminous (iridescent),	05	Fergusonite,	2 00
“ Cannel,	05	Fibrolite,	10
Cobaltite,	2 00	Flexible Sandstone,	10
“ 50%,	75	Flint,	05
Coccolite,	05	Fluorite, green or white,	05
Colemanite,	25	Fowlerite,	25
Columbite, Etta Mine, S. D.,	75	Franklinite,	10
Copalite,	2 00	Fuchsite,	50
Copiapite,	50	Gadolinite,	3 00
Copper, native,	15	Galena, cleavage,	05
“ glance,	50	Ganomalite,	75
“ pyrites,	15	Garnet, Almandite,	15
Coquimbite,	50	“ Grossularite (white),	50
Cordierite, Norway,	1 50	“ Polyadelphite (Andradite),	15
Corundum, gray,	25	“ Pyrope (gem),	2 00
“ good cleavage,	50	Garnierite,	50
“ deep blue,	1 00	Gibbsite,	25
“ pink,	1 00	Gilsonite,	35
“ Emery,	10	Glauberite,	50
Covellite,	2 00	Glaucodot, per oz., 50c.	
Croci lolite, unaltered,	1 00	Glaucinite,	05
“ altered to		Gold-bearing Quartz, } according {	1 00
Quartz (“Tiger Eye,”)	25	“ Pyrite, } to richness {	10 00
Cryolite,	15	Göthite,	30
Cumengéite, xls., per gr., \$1.00.		Graphite,	15
Cuprite,	75	Gray Copper,	50
Cuprodescloizite,	50	Graphite,	60
Cyanite,	15	Grossularite (white),	50
Cyrtolite and Fergusonite,	75	Guano,	20
Damourite,	50	Guitermannite,	50
Danburite, per oz., 25c.		Gummite, per oz., 50c.	
Datolite, N. J.,	1 00	Gypsum, massive, Mich.,	05
Descloizite,	1 00	“ fibrous, N. Y.,	05
“ Cuprodescloizite,	50	“ Alabaster, Italy,	15
Diadochite, per oz., 50c.		“ Satin Spar, Eng.,	25
Diallage,	25	“ Selenite, Utah,	05
Diaspore,	1 50	Halite, granular,	05
Diopside,	2 00	“ transparent cubes,	20
Diopase, per oz., \$3.00.		Halotrichite,	1 50
Dolomite,	05	Hanksite,	1 00
Domeykite, per oz., 50c.		Hauerite, per oz., 50c.	
Dufrenite,	25	Hausmannite, 75%, Sweden,	25
Dumortierite,	1 00	Heavy Spar, Conn.,	05
Dysanalyte, per oz., 25c.		Hedyphane, per oz., 50c.	
Dyscrasite, per oz., \$2.50.		Hematite, specular ore, Minn.,	05
Edenite,	10	“ crvst., Elba,	20
Elaeolite,	25	“ Kidney Ore, Eng.,	35
Elaterite,	50	“ Red Ochre, N. Y.,	05
Electro Silicon, Nevada,	30	Hercynite,	75
Embolite, N. S. W., per oz., \$1.50.		Hessite, per gr., 35c.	
Emerald, xls., per oz., \$1.00.		Heulandite,	2 50
Emery, Asia Minor or Mass.,	10	Hexagonite,	50
Emplectite, per oz., 35c.		Hiddenite, per gr., 25c.	
Enargite,	1 00	Honestone,	10
Enstatite (Bronzite),	25	Hornblende,	05
Endlichite (V. As. Cl and Pb, pure massive),	75	Horn Silver, per oz., 50c.	
Epidote, green,	15	Hvacinth, xls., per oz., \$1.50.	
		Hydromagnesite,	2 00

	Per lb. \$ cts.		Per lb. \$ cts.
Hydrotalcite,	\$1 25	Metacinnabarite, per oz., 75c.	
Hypersthene,	35	Mexican Onyx,	\$0 15
Iceland Spar, Mo.,	1 00	Mica,	05
" flawless, Iceland,	2 00	Microcline (Amazon Stone),	15
" large, flawless pieces for optical work, Iceland, 4 00		Microcline, per oz., \$1.00.	
Idocrase,	15	Milky Quartz,	05
Ilmenite, R. I. or Pa.,	20	Millerite, Germany or Pa.,	1 50
Infusorial Earth, Va.,	15	Mimetite, per oz., 50c.	
" " Nevada,	30	Mispickel,	15
Iolite, Chlorophyllite, N. H.,	15	Molybdenite, Can. or Sweden,	75
" Cordierite, Norway,	1 50	Molybdenite, coating on rock,	35
Iridosmine, per gr., 20c.		Monazite, sand, N. C.,	20
Iron, meteoric, Cañon Diablo,	3 20	Monticellite,	2 00
(Per oz., 40c; $\frac{1}{2}$ lb., \$2.00.)		Moss Agate, Wyo.,	50
" terrestrial, Greenland,	3 20	Muscovite, ordinary,	05
(Per oz., 40c; $\frac{1}{2}$ lb., \$2.00.)		" Damourite,	50
" Pyrites,	05	" Fuchsite,	50
Itacolumyte,	10	" Margarodite,	50
Jadeite, New Zealand,	1 50	Nadorite,	2 00
Jamesonite,	1 25	Natrolite,	1 50
Jasper,	10	Natron,	1 25
Jefferisite,	1 00	Nephelite (Elaeolite),	25
Kainite,	35	Nicolite,	1 25
Kaolinite,	05	Nigrine, Ark.,	20
Keilhaute (Yttrotitanite),	1 00	Northupite, xls., per gr., \$1.00.	
Kieserite,	35	Novaculite,	10
Labradorite, best, Labrador,	35	Obsidian,	20
" New York,	05	Oligoclase, clear,	25
Lapis-Lazuli (Lazurite),	1 00	" Sunstone,	35
Laumontite,	1 00	Olivene, 10%,	75
Lawsonite, xls., per oz., 25c.		Olivine,	15
Lazulite,	2 50	Oölite,	05
Lazurite,	1 00	Opal, common,	25
Lepidolite, Me.,	10	" Infusorial Earth, Va.,	15
" Cal.,	05	" " Nev.,	30
Leucite, xls., per oz., 75c.		" Precious, Mex., per oz., 50c.	
Leucopyrite,	35	" Wood Opal, Idaho,	25
Limestone,	05	Orangite, per oz., \$1.50.	
Limonite,	05	Orpiment, Hungary,	1 00
Lithographic Limestone,	05	Orthite,	15
Lodestone, good,	25	Orthoclase, cleavage,	05
" strongest,	50	Ozocerite,	50
Löllingite (Leucopyrite),	35	Pachnolite,	50
Ludwigite,	50	Pectolite,	1 00
Magnetite,	05	Perovskite, per gr., 25c.	
Magnetite, granular, N. Y.,	05	Perthite,	35
" Lodestone, good,	25	Petalite,	50
" " strongest,	50	Petrified (Jasperized) Wood,	15
Malachite,	25	Phenacite, per gr., 25c.	
Malacolite, xls.,	50	Phosgenite,	75
Manganite,	35	Phosphate rock, Fla. or S. C.,	05
Marble,	05	Phlogopite,	15
Marcasite,	35	Phyllite, 10%,	05
Margarite,	75	Platinum, native, per gr., 50c.	
Margarodite,	50	Plumbago,	15
Marl,	05	Pollucite, per gr., 50c.	
Masonite,	50	Polyadelphite (Andradite),	25
Meerschbaum,	1 50	Polyrase, per oz., 50c.	
Melinophane, per oz., \$1.50.		Polyhalite,	50
Mellite, per oz., \$2.50.		Prehnite,	20
Menaccanite, R. I. or Pa.,	20	Prochlorite,	05
Mercury,	75	Proustite, per oz., \$2.00.	
		Psilomelane,	10

POUND LIST.

83

	Per lb. \$ cts.		Per lb. \$ cts.
Pyrargyrite, per oz., \$2.00.		Siderite,	\$0 05
Pyrite, Spain,	\$0 05	Silver in Quartz, } according {	25
“ sand, Va.,	05	“ bearing Galena, } to richness, {	1 00
Pyrolusite,	15	Silver Glance, per oz., \$1.50.	
Pyrope (gem),	2 00	Sipylite, per oz., \$1.50.	
Pyrophyllite,	25	Smaltite,	2 00
Pyropissite,	75	Smithsonite,	35
Pyromorphite,	1 00	Smoky Quartz, Col.,	10
Pyroxene, Augite, xls.,	50	Soapstone,	05
“ Coccolite,	05	Sodalite,	1 50
“ Diallage,	25	Soda Niter,	25
“ Malacolite, xls.,	50	Sperrylite, per gr., \$1.75.	
Pyrrhotite,	15	Sphalerite, cleavable,	10
Quartz, Agate banded, Brazil,	25	“ fibrous,	10
“ Amethyst, Ger.,	35	“ white granular,	20
“ Chalcedony,	25	Spinel,	2 00
“ Chert or Buhrstone,	05	Spodumene,	10
“ Citrine,	1 00	“ Hiddenite, per gr., 25c.	
“ Flexible Sandstone (Itacol- umite),	10	Stannite,	1 00
“ Flint,	05	Staurolite,	1 50
“ Honestone,	10	Steatite,	05
“ Jasper,	10	Stephanite, per oz., \$1.00.	
“ Milky,	05	Stibiconite, 25%,	50
“ Moss Agate, Wyo.,	50	Stibnite, Servia or Mex.,	20
“ Petrified (Jasperized) Wood,	15	Stilbite,	35
“ Rock crystal, clear, Ark.,	20	Stinkstone,	15
“ Rose, S. D.,	20	Stream Tin,	25
“ Smoky, Colo.,	10	Strontianite,	25
“ Tiger-eye,	25	Struvite, per gr., 25c.	
Quicksilver,	75	Succinite (Amber),	2 00
Rammelsbergite,	1 25	Sulphur, native,	20
Realgar,	1 50	Sunstone,	35
Rhodochrosite,	50	Sylvanite, per oz., \$3.00.	
Rhodonite, Mass.,	25	Sylvite,	50
“ Fowlerite,	25	Tachhydrite,	35
Ripidolite,	50	Talc, foliated,	25
Rock Crystal, Ark.,	20	“ Steatite,	05
Roemerite,	2 00	Tennantite, per oz., 35c.	
Rose Quartz, S. D.,	20	Tetradymite, per oz., \$1.50.	
Rubellite in Lepidolite,	25	Tetrahedrite,	50
“ pure,	1 00	“ Argentiferous,	75
Ruby Silver, see Pyrargyrite and Proustite.		Thaumasite,	1 00
Rutile, Nigrine, Ark.,	20	Thenardite,	50
“ Pa., red,	40	Thomsonite, 15%,	25
“ “ finest quality,	1 00	Thorite, per oz., \$1.00.	
Sal-Ammoniac.	2 50	“ Orangite, per oz., \$1.50.	
Salt. See Halite.		Tiemanite, per oz., 75c.	
Samarskite,	1 00	Tiger Eye,	25
Sassolite,	50	Titanite,	20
Satin Spar, Eng.,	25	Topaz,	25
Scapolite (pink),	15	Tourmaline, Rubellite in Lepidolite,	25
Scheelite,	75	“ “ pure,	1 00
Schorlomite,	50	“ black,	15
Scolecite, N. J.,	1 50	“ brown,	15
Selenite, Utah,	05	Travertine,	05
Senarmontite, 50%,	75	Tremolite,	25
Sepiolite (Meerschau),	1 50	Triphylite,	60
Serpentine, Pa.,	05	Triplite, 25%,	25
“ Chrysotile,	35	Tripolite, Va.,	15
“ Williamsite,	10	“ Nev.,	30
		Tscheffkinite,	75
		Turquoise,	50
		Tysonite, per oz., \$5.00.	

	Per lb. \$ cts.		Per lb. \$ cts.
Uintahite,	\$0 35	Williamsite,	\$0 10
Ulexite,	75	Witherite,	15
Ullmannite,	1 25	Wolframite,	35
Uraninite,	3 00	Wollastonite,	35
Uranophane (Uranotil), per oz., 50c.		Wood Opal, Idaho,	25
Valentinite,	75	Wood Tin,	50
Vanadinite, per oz., 25c. (Endlichite, V. As. Cl and Pb, pure massive, 75c. lb.)		Wulfenite,	1 00
Vesuvianite,	15	Wurtzilite,	1 00
Vivianite,	1 50	Xenotime, per oz., 35c.	
Wad,	20	Yttrotitanite,	1 00
Wagnerite, Kjerulfine,	2 00	Zinc Blende,	10
Wavellite,	50	Zincite,	50
Wernerite, pink scapolite,	15	Zincite, with Franklinite, etc., . .	15
“ yellow “	1 00	Zinnwaldite,	75
Willemite,	25	Zircon,	35
		“ Hyacinth, per oz., \$1.50.	
		Zoisite, Mass.,	20
		Zunyite, 10%,	50

IV.

METEORITES.

A list of other falls represented in our stock will be mailed on application. Correspondence is solicited with any one desiring to buy or sell.

Cañon Diablo, Arizona, Diamondiferous Meteoric Iron. Probably no other meteorite in the world's history has attracted such widespread and continued interest among scientists and others as the *Cañon Diablo*.

In March, 1891, a prospector found indications of what he supposed was a "mine of native iron." An assay of a sample of his ore gave rather confusing results, and a specimen was shown Dr. A. E. Foote for his opinion. He at once pronounced it meteoric. In June, 1891, he visited the locality, obtaining several large masses and some small pieces. It is believed that all of the iron has been gathered up in the thorough searches made by different parties since that time, including one under the auspices of the United States Geological Survey. The original sample (Plate XIII) was sent for analysis to Prof. G. A. Koenig, who found in the mass; Diamonds, both black and white, iron carbide, sulphur, phosphorus, nickel, cobalt and silica. The following is taken from an account of Professor Koenig's preliminary notice:

"In cutting the meteoric iron for study it was found to be of an extraordinary hardness, the section taking a day and a half, and a number of chisels having been destroyed in the process. When the mass, which on the exterior was not distinguished from other pieces of meteoric iron, was divided, it was found that the cutting apparatus had fortunately gone through a cavity. In the attempt to polish the surface so as to bring out the characteristic Widmannstätten figures, Dr. Koenig received word that the emery wheel in use had been ruined.

"On examination, he then found that the exposed cavities contained Diamonds which cut through polished Corundum as easily as a knife will cut through Gypsum. The Diamonds exposed were small, black, and, of course, of but little commercial value, but, mineralogically, they are of the greatest interest, the presence of such in meteorites having been unknown until 1887, when two Russian mineralogists discovered traces of Diamonds in a meteoric mixture of olivine and bronzite. Granules of amorphous carbon were also found in the cavity, and a small quantity of this treated with acid had revealed a minute white diamond of one-half a millimeter, or about $\frac{1}{16}$ of an inch in diameter. In manipulation, unfortunately, this specimen was lost, but others will doubtless be obtained in the course of investigation. The minerals Troilite and Daubreelite were also found in the cavities. The proportion of nickel in the general mass is three per cent., and the speaker was

not as yet able to account for the extraordinary hardness apart from the presence of the Diamonds in the cavities."

The interesting character of the iron led other eminent chemists and high authorities on meteorites, to investigate it, all of whom have proved the presence of Diamonds, irregularly disseminated throughout different specimens examined. No Diamonds of any commercial value have been found; the white crystals were very minute, the larger ones being simply rough black Diamonds.

Dr. Foote called the attention of the scientific world to the discovery in a paper read by him before a meeting of the American Association for the Advancement of Science, held in Washington, D. C., August 20th, 1891. (*A New Locality for Meteoric Iron with a Preliminary Notice of the Discovery of Diamonds in the Iron.*) This announcement awakened much interest, which was reflected in both the popular and scientific journals, and more or less serious speculation was indulged in as to this new source of Diamonds. A most astounding, and yet when examined, reasonable suggestion, was that a small world, of perhaps one-eighth of a mile diameter, had struck Mother Earth at Cañon Diablo. This theory was announced by Prof. G. K. Gilbert, of the United States Geological Survey, in the discussion following the reading of Dr. Foote's paper. Later it was embodied in his Annual Address as President of the Geological Society of Washington, read December 11th, 1895. (*The Origin of Hypotheses, Illustrated by the Discussion of a Topographic Problem.*) Our thanks are due to the publishers of *Science* for the three illustrations used here.

Space permits our presenting only a brief outline of portions of the article, showing the exhaustive analysis to which Professor Gilbert subjected his hypothesis.

The iron, unquestionably meteoric, was found about Coon Butte, a saucer-shaped hollow, three-quarters of a mile broad, 600 feet deep, with its rim extending 150 feet above the level of the surrounding plain. Underlying the scanty soil of this plain are level beds of limestone. To any observer it was evident that a great disturbance had formed the crater, where before was only level plain. The crater was exactly such a one as may be made by throwing clay balls at a clay target, or by a steel projectile fired at steel plate. Strewn about the surrounding country were great masses of limestone (similar to the upturned broken edges of strata lining the sides of the crater), evidently thrown there by the disturbing force. Among these were found masses of metallic iron and a great quantity of iron oxide (altered from iron sulphide), of meteoric origin.

One hundred and sixty-five meteoric falls are recorded within the United States and irons have been found weighing many tons in different parts of the world. The entire absence of volcanic rock and the contour of the formation disproved any theory that this was a true crater. In connection with these established facts, the suggested analogy between a projectile and a huge meteorite invited investigation. By a careful topographic survey it was found that the volume of the rim and the *débris* would precisely fill the hollow, thus restoring the ancient plain, with no excess of material to account for the volume of the colliding star. This must have been at least one-eighth of a mile in diameter (estimated by experiments with clay targets). Moreover, a magnetic survey in the crater proved that no mass of iron was below the surface unless at a great depth.

So the hypothesis seemed entirely disproved.

Prof. Gilbert also reviews theories accounting for such isolated formations on the earth's surface as resemble this, and concludes that they are of different origin. Other explanations of the Cañon Diablo phenomenon are mentioned by him. The most important of these upsets his negative answer—which he based on the volumetric and magnetic tests. The majority of meteorites actually seen to fall are stones, and not solid irons. These stones have disseminated through them masses of metallic iron. According to the new explanation, the colliding star was a stony mass, while the irons actually found, weighing from less than an ounce to over 1,000 pounds, were but a small portion of its bulk, and if more are below the surface they are not sufficient to deflect the magnetic needle. As before mentioned, quantities of Limonite (supposed to have formed part of the stony mass) were found near the crater. Answering the volumetric test, it is assumed that so great a body, coming with frightful velocity, might by the force of the collision condense the rocks in its path, literally piercing the earth's crust, and leaving little behind to indicate its volume.

So to-day the question is still open: Was it a coincidence that the meteorites were found about this non-volcanic crater, and if so, what caused the latter phenomenon?

We still have a number of small complete Cañon Diablo irons, from less than an ounce to ten ounces, priced at about 30c. per oz. 25c. to \$2.75

The same, brightly polished on one side and etched if desired, 50c. to \$1.25 more. The polishing is costly on account of their extreme hardness, due undoubtedly to the presence of minute Diamonds. 3 to 10 oz.

\$2.00 to \$4.00

In addition to some slightly larger masses, the following are offered at prices lower than asked for any other recorded fall. A rare opportunity for museums or collectors to secure an object of great interest.

No. 1. One of the largest found. Weight, 835 pounds. About 25x25x10 in. Shows pitted surface well and has several holes, completely perforating the mass at the edges. \$175

No. 2. Shown in Plate XII. Weight, 201 pounds. About 19x10x7 in. This is the original mass found and described by Dr. Foote. It is of neat shape and finely marked. Three perforations. \$75

No. 3. End section of a large mass. Weight, 35 pounds. About 12x7x3 in. This is a handsome shelf specimen, brightly polished on 12x7 face, showing Daubreelite. \$40

Limonite, The oxidized portion of the meteorite. Pieces 1½ to 4 in. 15c. to 75c.

Sacramento Mountains (N. M.) Meteoric Iron. (W. M.

Foote *Am. Jour. Sci.*, Jan., 1897. *Note on a New Meteorite from the Sacramento Mountains, Eddy County, New Mexico.*) This mass of iron is believed to be the meteor seen to fall at this place in 1876. No fragments could be found and the specimen appeared to be complete, weighing when found, 522 pounds. After purchasing it, the two ends were sawn off, forming a base about 10x3 in., the top measuring about 14x4 in. It is a level etched surface, showing a large Troilite nodule and the perfect crystallization of the iron (see XI). This characteristic octahedral crystallization is plainly exhibited on the fractured edges. The two deep round pits, 4 to 5 in. diameter, constitute a curious feature. The exterior is covered with the peculiar "thumb-marks," common in meteoric irons.

Analysis of a metallic sample gave: Iron, 91.39; Nickel, 7.86; Cobalt, .52=99.77.

The sawing was easily accomplished, the iron being quite soft. Its comparative softness and crystallization, would alone distinguish it from Cañon Diablo iron. The main mass, weighing 414 pounds, shown in Plate XII, and also the slab sawn from the top, are for sale. This complete section weighs 6 pounds 2 ounces, measures about 4x14 in. with uniform thickness of ⅝ in.; polished level on both sides, showing one Troilite nodule and a perforation at the edge.

Greenland Terrestrial Native Iron. Described on page 36, under New Arrivals.

V.

GEMS AND POLISHED SPECIMENS.

Gems.

The business of supplying universities and students with minerals for scientific investigation, demands a careful selection of high-class material and absolute accuracy in classifying and labeling. In our gem department equal precaution has been taken to insure against the errors so common among buyers, as well as dealers, and genuineness and correct naming are guaranteed. There are numerous misleading terms, such as "Topaz," applied to the yellow and smoky varieties of quartz, and "Ruby" to garnet and spinel. The following list shows the relation of the various popular names to the true ones. All the commonly used gem-stones are mentioned, and the different varieties or colors in which certain mineral species occur in gem-quality, are also noted.

An idea of proportionate sizes may be gained from the following approximate measurements: A 4 carat diamond measures about $\frac{3}{8}$ inch across; 2 ct., $\frac{5}{16}$ in.; 1 ct., $\frac{1}{4}$ in.; $\frac{1}{2}$ ct., $\frac{3}{16}$ in.; $\frac{1}{4}$ ct., $\frac{5}{32}$ in.; $\frac{1}{8}$ ct., $\frac{1}{8}$ in. In high priced stones the rate per carat increases with the size. The prices per carat, given opposite each name, are for stones of fairly good to fine quality.

(Gems will be sent on approval to those known to us, or furnishing references.)

	Per Carat.		Per Carat.
Alexandrite (Chrysoberyl),	\$30.00 to \$90.00	Montana Sapphire (different colors), Ruby.	
Almandite (Garnet),	.50 " 1.50	Diamond,	\$50.00 to \$100.00
Amber,	.15 " .35	Emerald (Beryl),	60.00 " 150.00
Amethyst (Quartz),	.50 " 1.50	Fire Opal,	.75 " 4.00
" Oriental (dark color),	3.50 " 15.00	Garnet, varieties:—Almandite, Carbuncle (cut <i>en cabochon</i>), Pyrope and Ruby.	
Aquamarine (Beryl),	.75 " 6.00	Hyacinth (Zircon),	2.00 " 3.50
Asteriated Sapphire,	2.00 " 8.00	Indicolite (Tourmaline),	3.00 " 8.00
Balas Ruby (Spinel),	10.00 " 30.00	Jargon (Zircon),	3.00 " 6.00
Beryl, Golden, Aquamarine (pale green), Emerald (deep green).		Moonstone (Oligoclase),	.50 " 1.00
Cairngorm Stone (Quartz),	.15 " .50	Olivine (Chrysolite),	9.00 " 16.00
Carbuncle (Garnet cut <i>en cabochon</i>),	.75 " 2.50	Opal, Australian,	1.50 " 12.00
Cat's Eye (Chrysoberyl),	5.00 " 15.00	" Mexican,	.50 " 4.00
" (Quartz),	.15 " .50	" Fire,	.75 " 4.00
Chrysoberyl, pale green, pale yellow, dark green (Alexandrite), Cat's Eye (<i>en cabochon</i>),	3.00 " 9.00	Peridot (Tourmaline),	1.50 " 3.00
Chrysolite,	6.00 " 10.00	Prehnite (<i>en cabochon</i>),	.50
Citrine (Quartz) "Yellow Topaz,"	.10 " .40	Pyrope (Garnet),	.50 " 1.50
Corundum, varieties:—Blue Sapphire, Asteriated or Star Sapphire,		Quartz, varieties:—Rock Crystal (clear, colorless), Cairngorm (smoky), Citrine (yellow), Amethyst, Cat's Eye.	
		Rock Crystal (Quartz),	.15 " .50

	Per Carat.			Per Carat.	
Rubellite (Tourmaline),	\$3.00	to \$8.00	Topaz, "smoky" (Cairn-		
Ruby (Corundum, true			gorn stone), .	\$0.15	to \$0.50
Ruby),	24.00	" 80.00	Tourmaline,	2.00	" 8.00
Spinel,	8.00	" 35.00	varieties:—Indicolite		
Garnet,	.50	" 1.50	(dark blue), Peridot		
Sapphire (Corundum), .	5.00	" 20.00	(yellowish green), Ru-		
Spinel, Ruby,	8.00	" 35.00	bellite (pink).		
Topaz, clear, colorless			Turquoise,	1.50	" 6.00
and yellow, .	.75	" 2.25	Zircon,	2.00	" 6.00
" "yellow" (Cit-			varieties:—Hyacinth or		
rine),	.10	" .40	Jacinth (red), Jargon		
			(smoky).		

Polished Specimens.

For collectors and museums. Suitable for paperweights and ornamental purposes. The lowest price indicates a nice small piece; the highest, something extra fine and showy for the cabinet.

Back and edges show the natural rough surface unless otherwise noted.

Especial attention is called to the great beauty and novelty of the Opalized wood.

Agate, banded,	\$0.10	to \$3.00	Heliotrope (Bloodstone),	\$0.35	to \$1.00
" bull's eye,	.25	" 1.00	Hematite,	.35	" .50
" moss,	.15	" 2.50	Hornblende,	.35	" .75
Amber,	.75	" 2.50	Hypersthene,	1.00	" 4.00
Amethyst,	.35	" 1.50	Iceland Spar, clear, color-		
Amphibole,	.35	" .75	less rhomb polished on		
Andalusite,	.35	" 2.00	all sides (Iceland), .	2.50	" 5.00
Aventurine Feldspar, . .	1.00	" 3.50	Iceland Spar, Amethyst-		
Azurite and Malachite, .	.50	" 3.50	ine, clear rhomb pol-		
Baltimorite,	1.00	" 2.00	ished on all sides (Mo.),	2.00	" 3.50
Barite, stalactite section,	.75	" 2.00	Iron, meteoric, diamond-		
Bloodstone,	.35	" 1.00	iferous (Arizona), . .	1.00	" 5.00
Blue Quartz,	.35	" 3.00	Iron, terrestrial (Green-		
Calcite, varieties:—Ice-			land),	1.00	" 5.00
land Spar, Marbles,			(Iron is either brightly		
Mexican Onyx, Oölite,			polished, or etched to		
Stalactite and Stalag-			show crystalline struc-		
mite, Travertine.			ture.)		
Carnelian,	.10	" .50	Jadeite,	.35	" 13.50
Cassiterite,	.15	" .75	(Jade is a term applied to		
Chalcedony,	.10	" 1.50	this and other min-		
Copalite (fossil amber),			erals.)		
containing insects, . .	.50	" 2.00	Jasper,	.10	" 1.00
Crocidolite altered to			Jasperized Wood, . . .	.25	" 5.00
Quartz,	.10	" 3.50	Labradorite,	.25	" 3.00
Deweylite,	.25	" 1.00	Lapis Lazuli, Lazurite, .	.10	" 5.00
Dumortierite,	.75	" 2.00	Malachite, Arizona, . .	.25	" 2.00
Flèches d'Amour,	.50	" 9.00	" Russia,	.25	" 5.00
Fluorite,	.25	" 2.00	" and Azurite, . .	.50	" 3.50
Garnet, pink,	.50	" 3.00	Marble (various), . . .	.25	" 1.50
" Almandite (large			Meteorite Iron, diamond-		
crystal, polished			iferous,	1.00	" 5.00
on 12 faces), . . .	4.00	" 7.00	Microcline, Amazon		
Gold in Quartz,	2.00	" 4.00	Stone,	.75	" 2.00
Göthite in Quartz,	.50	" 3.00	" Chatoyant, . . .	.50	" 5.00
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Grossularite,	.50	" 3.00	Moss Agate,	.50	" 2.50

Oligoclase, varieties:— Moonstone, Sunstone.		Rock Crystal, Japanese ball,	\$0.50 to \$45.00
Onyx (Quartz),	\$0.25 to \$0.75	Rhodonite,	.25 " 2.50
" Mexican (Calcite),	.25 " 2.00	Rose Quartz,	.50 " 2.00
Öolite (Quartz),	1.00 " 2.00	Rutilated Quartz,	.50 " 9.00
" (Calcite),	.50 " 1.00	Sapphire Quartz,	.35 " 3.00
Opal-Agate,	.50 " 1.50	Sard,	.10 " .25
" green, mottled with brown-red,	.50 " 5.00	Sardonyx,	.10 " .25
" precious,	.75 " 5.00	Serpentine,	.25 " 1.50
Opalized Wood,	.75 " 12.00	" Verd-Antique,	.25 " 2.00
Perthite,	.50 " 2.00	" Williamsite,	.25 " 1.50
Petrified Wood. (See Jas- perized and Opalized.)		Smithsonite,	.25 " 1.50
Picrolite,	.50 " 1.00	Sodalite,	.75 " 3.00
Pudding Stone (Quartz),	.50 " 1.25	Sphalerite and Galena, . .	1.00 " 2.00
Quartz, varieties:—Agate, Amethyst, Bloodstone, Blue (Sapphire), Car- nelian, Chalcedony, containing Rutile, con- taining Göthite, Helio- trophe, Jasper, Jasper- ized Wood, Moss Agate, Rock Crystal, Rose, Sard, Sardonyx, Smoky.		Stalactite and Stalagmite, .	.25 " 1.50
		Succinite (Amber),	.75 " 1.50
		Sunstone,	1.00 " 3.50
		Thomsonite,	.25 " 1.50
		Thulite (Pink Zoisite), . .	.10 " 1.50
		" Tiger Eye,"	.10 " 3.50
		Travertine,	.50 " 2.00
		Turquoise in rock,	.25 " 3.50
		Variscite,	1.00 " 8.00
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VI.

BOOKS ON MINERALOGY AND GEOLOGY.

The following brief list of books embraces most of the advanced and elementary works on general mineralogy and geology which are in use at the present time.

New copies of all are kept in stock, and can be mailed on receipt of order. Postage or expressage to be paid by purchaser.

Our low prices are but a slight advance on publishers' trade rates.

(Collections illustrating various text-books are described under "C" in preceding pages.)

Mineralogy.

Bauer, Max. *Lehrbuch der Mineralogie.* (In German.) 562 pp., 588 illustrations. 8vo, paper. Price, \$3.25

Bauerman, H. *Systematic Mineralogy.* 376 pp., 373 wood-cuts. 12mo. Publisher's price, \$2.00; our price, 1.75

Bauerman, H. *Descriptive Mineralogy.* 408 pp., 236 wood-cuts. 12mo. Publisher's price, \$2.00; our price, 1.75

Boston Society of Natural History. *Guides for Science-Teaching.* See Crosby, Clapp, and Richards.

These guides are intended for the use of teachers who desire to practically instruct their classes in Natural History, and designed to supply such information as they need in teaching and are not likely to get from any other source.

Brush, G. J. *Manual of Determinative Mineralogy, with an Introduction on Blowpipe Analysis.* Revised and enlarged by Prof. S. L. Penfield, of Yale University.

For many years this work has been the standard American text-book on blowpiping and determinative mineralogy, being generally used in schools and colleges.

The former editions, by Prof. George J. Brush, are on the plan of Von Kobell's "Tables," in the introductory chapters. The second portion of the work is taken up with the extensive tables for determination of species.

In the present edition the entire text treating of blowpipe analysis has been revised by Prof. Penfield, and many new tests added, with detailed instruction on methods of manipulation, etc., etc., which will be of invaluable assistance to both student and teacher.

Fourteenth edition, 8vo, cloth. 271 pp. Publisher's price, \$3.50; our price, 3.00

work have been made anew. * * * The habits of the crystals, methods of twinning, and the physical characters, especially those on the optical side, have been carefully rewritten and in general are given with much fullness. * * * In the list of analyses, the plan has been to give all that are useful for a complete understanding of the composition of each species. * * * The clear development of the varieties of a species in their proper relation to each other and to the main species, which was one of the excellent features of the last edition, has been carried through as far as possible in the same way. * * * The localities are given with much fullness for this country and are to be supplemented by the Catalogue of American Localities at the end of the volume, which * * * has been made much more complete and accurate than heretofore."

Royal 8vo, half-morocco. 1,197 pp., 1,425 illustrations.

Publisher's price, \$12.50; our price, \$10.00

Dana, E. S. *Text-book of Mineralogy.*

This book meets the requirements of class instruction, being suited to an advanced course, and also useful as a shorter book of reference. The descriptive part is an abridgment of the *System of Mineralogy*. The chapters devoted to crystallography and the physical characters of minerals treat of these important branches in a systematic and scientific manner.

537 pp., 826 illustrations. Seventeenth edition. 8vo, cloth.

Publisher's price, \$3.50; our price, 3.00

Dana, J. D. *Manual of Mineralogy and Petrography.*

Less technical than the text-book and adapted for use in schools and for those pursuing a brief course. The chapters devoted to the classification and description of rocks are especially useful.

517 pp., illustrated. Twelfth edition. 12mo, cloth. Pub-

lisher's price, \$2.00; our price, 1.75

Dana, E. S. *Minerals, and How to Study Them.*

"This elementary book is especially welcome, as for a long time the need has been felt of such a work by those who are commencing the study of mineralogy. For a full and proper understanding of the science there is needed a knowledge of chemistry, crystallography and physics, and to present the subject, therefore, so that it can be comprehended by beginners is not an easy matter. * * * One of the chief features of this new book is that the author has constantly kept in mind that the subject is being presented to beginners, the use of technical terms has, therefore, been wisely avoided and the subject-matter throughout the book is *readable*.

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Dana, E. S. *Catalogue of American Localities of Minerals.*

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Endlich, F. M. *Manual of Qualitative Blowpipe Analysis and Determinative Mineralogy.* 456 pp. Many illustrations and colored spectrum. 8vo, cloth. Publisher's price, \$4.00; our price, 3.60

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Groth, P. *Tabellarische Übersicht der Mineralien nach ihren Krystallographisch-chemischen Beziehungen.* (In German.)

This systematic review of mineral species, arranged in tabular form, is largely used in colleges and educational institutions where an advanced course in mineralogy is given. It is very useful for reference on the subject of the exact chemical constitution and relationship of minerals, the discussion of the silicates being especially valuable. The old style of formula is employed, as expressing the composition in the clearest form; the author also preferring to write the acid radical first. Throughout, due attention is given to the crystallographic and physical characters of minerals, and the including of rare compounds makes the work complete. It is intended to form a basis for mineralogical lectures and also to save students the labor of copying the many complex chemical and crystallographic formulas.

179 pp. 1889. Paper, price,2.25

Hamlin, A. C. *Leisure Hours Among the Gems.* Illustrated. Crown 8vo. Publisher's price, \$2.00; our price,1.80

Hintze, C. *Handbuch der Mineralogie.* (In German.) Published in parts, twelve of which have been issued.

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where as one of the highest authorities in mineralogical literature. Subscription for the entire work only will be received, at \$1.50 for each part.

Hooker, W. *Mineralogy and Geology.* 360 pp. Illustrated. 12mo, half leather. Price, \$0.90

Hunt, T. Sterry. *Systematic Mineralogy, Based on a Natural Classification.* Second edition. 391 pp. 8vo, cloth. Publisher's price, \$5.00; our price, 4.50

Hussak, E. *The Determination of Rock-forming Minerals.* Translated by Prof. E. G. Smith. 249 pp., 103 illustrations. 12mo, cloth. Publisher's price, \$2.00; our price, 1.75

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Orton, James, (late Professor of Natural History in Vassar College.) *Underground Treasures; How and Where to Find Them.*

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145 pp. 1896. Price, 1.50

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VII.

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The securing of good cases and other accessories required for the proper housing and exhibition of specimens is often a troublesome problem to solve. The time required to make patterns and look up a manufacturer for these special articles compels many to use such material as can be most easily obtained, particularly when the cost of making up small quantities is taken into account.

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Quantities of the sizes quoted (except glass cases) are kept in stock, and can be shipped promptly on receipt of order.

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B. Shown in Plate 14. Polished quartered oak. Height, 2 ft. 6 in.; width, 2 ft.; depth at bottom, 10 in.; depth at top, 5 in. Can be fitted with one to three shelves. Hooks attached for hanging on wall. \$8.50.

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Quartered Oak.

A. Height, 2 ft.; width, 2 ft. 4 in.; depth 1 ft. 6 in. Contains six drawers. Inside measurements, $24 \times 15 \times 2\frac{3}{4}$ in. high, each holding thirty 4×3 in. trays, \$10.60.

B. Height, 1 ft. 4 in.; width, 2 ft. 4 in.; depth, 1 ft. 6 in. Contains four drawers. Inside measurements, $24 \times 15 \times 2\frac{3}{4}$ in. high, each holding thirty 4×3 in. trays, \$6.60.

Pasteboard Trays Extra.

C. Height, 1 ft. 2 in.; width, 2 ft.; depth, 1 ft. 5 in. Contains four drawers. Inside measurements, 24x15x2 in. high, each holding forty-eight 3x2½ in. trays, \$7.75.

D. Height, 11 in.; width, 2 ft.; depth, 1 ft. 5 in. Contains three drawers. Inside measurements, 24x15x2 in. high, each holding forty-two 3x2½ in. trays, \$5.75.

Compartment Cabinets.

Useful as sample-cases for prospectors, or those needing a strong and portable case.

For students or amateurs it is invaluable for keeping in place a collection of small specimens. These or any desired sizes made in quantities for schools at lower rates than quoted here for single cabinets. Sample is shown in Plate X.

A great improvement over those made of poplar or other cheap woods, both in appearance and serviceable qualities. The prices are about the same as the poorer grade have formerly sold for. Made of selected pieces of *quartered oak* of the finest quality, and guaranteed not to warp. They are handsomely finished, and every detail of their construction has been perfected in the present improved pattern. Fitted with nickel clasps and hinges; lock-corners, cleated covers, and rounded edges. Division strips are cut out and fitted together with a collar which surrounds and binds them firmly. This frame is fastened in lower part of the box, making square compartments. Cabinets for more than sixty specimens, have one or two lifting compartment trays.

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4 x3	9.20	1.15	0.02
3 x2½	8.50	1.00	0.01½
3 x2	8.50	1.00	0.01½
2½ x2	7.65	0.85	0.01½
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Any special size can be made to order in lots of 1,000 at the same price as quoted above for its nearest stock size.

Glass-Covered Boxes.

For holding small or delicate specimens. Neatly finished in black; white interior. Cover is fitted with strong glass, securely bound. All fitted with cotton. Assorted sizes, convenient height; rectangular, $1\frac{3}{4}$ to 3 in. diameter, per doz., \$0.80
 “ “ “ “ “ $3\frac{1}{2}$ to 5 in. “ “ “ 1.20
 Two “ “ “ “ round, $1\frac{3}{4}$ to $2\frac{1}{4}$ in. “ “ “ 0.60

Jewelers' Boxes.

For protecting small or delicate specimens. Finest quality pasteboard, glazed finish, all fitted with cotton. Assorted sizes from 2 to 3 in. diameter, 90 cts. per dozen.

Boxes for Microscopic Mounts.

Light and well-made pasteboard boxes for mounting groups of microscopic crystals. Lined with black; white cover. One inch square, five-eighths high. \$3.00 per 100. Less than 100, 4 cts. each.

Ebonized Crystal Stands.

Neatly turned from best maple, lacquered black and polished. Various styles.
 (1.) Base $1\frac{3}{4}$ in. diameter, height $1\frac{1}{2}$ in., with small tips for wax mounting.
 (2.) Same with broad shallow cups to hold crystals loosely. Also the same patterns in a smaller size, with $1\frac{1}{4}$ in. base and $\frac{3}{4}$ in. high. Assorted, 50 cts. per dozen, \$3.50 per 100.

Nickeled Crystal Holders.

One of the best patterns of the various metal holders for crystals. \$1.00 per dozen.

Blocks.

To hold label and specimen. Shown in Plate IX. Either cherry finish or oak. $1\frac{1}{8}$ in. thick, with beveled front for label, $1\frac{3}{4}$ in. broad, leaving the top narrower than the base.

Full length.	Breadth of base.	Breadth of top.	Per 100.	Each.
6 in.	5 in.	$3\frac{1}{2}$ in.	\$5.50	\$0.07
$4\frac{1}{2}$ in.	$4\frac{1}{2}$ in.	$2\frac{3}{4}$ in.	5.00	0.06
$3\frac{1}{2}$ in.	$3\frac{3}{4}$ in.	2 in.	4.50	0.05

Mailing-boxes.

For packing small or delicate specimens. Light pine wood, lock corners with slide cover. Or stout pasteboard, with lifting cover. Nested in sizes varying from 3 to 8 in. diameter. 40 cts. per dozen.

Glass Vials.

For holding small crystals, samples or mineral fragments. Made of finest quality extra heavy glass, fitted with selected corks. Flanged (rounded) mouth.

Inside diameter.	Inside length.	Price per 100.	Price per dozen.
7 in. flat end.	$2\frac{1}{2}$ in.	\$2.25	\$0.40
8 “ “	2 “	1.75	0.30
3 “ “	$1\frac{3}{4}$ “	1.75	0.30
4 “ “	$1\frac{3}{4}$ “	1.50	0.25
5 “ “	$2\frac{1}{4}$ “	1.25	0.20
6 “ “	$1\frac{1}{2}$ “	1.00	0.15
7 “ “	$1\frac{5}{8}$ “	1.00	0.15
8 “ “	$1\frac{5}{8}$ “	1.00	0.15

Glass Bottles.

Prices include corks.

Size.	Price per 100.	Price each, less than 100.
1 oz.	\$2.40	\$0.03
2 oz.	2.80	0.03½
4 oz.	4.00	0.05
6 oz.	4.80	0.06

Glass-Stoppered Bottles.

Wide mouth; iron mold; clear flint glass.

Size.	Price per 100.	Price each, less than 100.
1 oz.	\$6.40	\$0.08
2 oz.	8.40	0.10½
4 oz.	9.60	0.12
6 oz.	10.80	0.13½

Printed Mineral Labels.

Printed on good heavy paper, as shown on Plate IX. Giving species name, varietal or common name, chemical composition in words and symbols, crystallization and locality. The number in Dana's *System of Mineralogy* (sixth edition) is given for reference and for convenience in arranging the specimens of a collection. Labels of all the common, and a large number of the rare species and varieties are kept in stock. Important and well-known localities are represented. It makes a very neat label for either drawer or open cabinet, and adds much to the general tone of a collection. Size, 2¼x1¼ in. Price of different labels, 50 cts. per 100, or 1 ct. each.

Blank Mineral Labels.

Printed on heavy writing paper, size same as above, with neat border and either three or four dotted lines. 75 cts. per 1,000, or 15 cts. per 100.

Number Sheets.

Large, from 1 to 600 } 4 cts. per sheet, or 25 cts. per dozen sheets.
 Small, from 1 to 4,000 }

Paste.

The best in the market, for attaching labels or mending specimens. Can be evaporated to any thickness. Dries quickly and will not peel or crack. 5 cts. per bottle.

Wax.

In black sticks, for mounting crystals, 25 cts. each.

Mineralogists' Hammers.

According to the approved pattern. One end of head is rectangular; the other a knife edge, parallel to the handle. Best steel, specially tempered for breaking the hardest rocks. Price includes handles. For large work, 2½ and 2 lbs., \$1.00; preferred sizes, 1½ and 1 lbs., 75 cts.; for trimming small specimens and for use in blow-pipe work, ½ and ¼ lb., 50 cts. Per dozen, 20% less.

Chisels.

Ordinary sizes, 5 to 8 in. long, 35 cts. to 50 cts. Sizes, 3 and 3½ in. long are specially made for developing specimens. Knife edges and points. 30 cts. each.

Improved Mineral Trimmer.

Description on application, price, \$35.00

Pocket Lenses.

Achromatic Triplet.—Fine quality, nickeled case. Good definition and flat field. Preferred size, 1 in. focus, giving power of about ten diameters. Same, with $\frac{3}{4}$ in. focus, power of about fourteen diameters. \$4.00.

Hasting's New Aplanatic Triplet.—A high quality lens for accurate mineralogical work. 1½ in. focus, 6.7 diameters. Preferred size, 1 in. focus, 10 diameters. \$7.00.

New Aplanatic Magnifier.—A cheaply made glass, but equal in many respects to the more expensive triplet lenses. Gives a large and perfectly flat field; bright and of good definition, without spherical or chromatic aberration. \$1.50.

Coddington Lens.—Nickeled case, 1 in. focus, \$1.75; $\frac{3}{4}$ in. focus, \$1.50.

Ordinary Pocket Glass.—Hard rubber case, oval shape. 1 lens, 1 in. diameter, 35 cts.; 1½ in. diameter, 55 cts.; 2 lenses, $1\frac{1}{8}$ in. diameter, 65 cts.; 2 lenses, $1\frac{3}{8}$ in. diameter, 90 cts.

Hand Goniometer.

Improved pattern. Brass semicircle, graduated in degrees. Two sliding arms are adjustable from the same screw at centre. Price, in leather case, \$6.75.

Celluloid Crystal Models.

Series of Six Crystal Models in transparent celluloid (averaging 4 inches longest diameter), exhibiting the six different systems of crystallization, and showing various derivative forms by means of internal crystals.

These models exhibit the six systems of crystallization to which the innumerable forms occurring in nature may be reduced. Also, the number and positions of the internal axes of crystallization, the basis upon which the systems are formed.

They are made in two styles: Set A. The internal crystals are made of white transparent celluloid, with red borders. Set B. The internal crystals are made of red transparent celluloid. Price of the six models, in case, \$16.00.

Hardwood Crystal Models.

A. 213 models, according to Prof. Dr. P. Groth. Made of selected pear wood, each 5 c. m. diameter. This set is most complete, showing all the principal forms and combinations covered in a regular course in Crystallography. Price, duty free to institutions, \$205.00.

B. 108 models, according to Prof. Dr. Rose, each about 5 c. m. diameter. Includes the principal combinations of the six systems of crystallization. In case, with list for reference, \$22.00.

C. 34 models selected from the preceding and showing most important forms. Case and list accompany. \$10.00.

Models of Precious Stones.

Set of 24 imitations of precious stones cut from crystal glass, colored to resemble the true stones. In velvet-lined box. \$17.25.

Metals.

A. The fifteen principal metals in sticks 8 c. m. x 45 m. m. (Gold is represented by aluminium-bronze.) In neat case. \$22.00.

B. A set of fourteen metals, according to Prof. Dr. R. Arendt. Cut in thin strips of equal width and thickness, their specific gravity being shown by their varying lengths. Attached to a card. Two sizes, \$9.00 and \$14.00.

Portable Blowpipe Set.

Complete outfit for prospectors or others desiring to determine minerals in the field, by the dry or wet methods. Includes apparatus and reagents recommended by Prof. S. L. Penfield in his revised edition of Brush's *Determinative Mineralogy and Blowpipe Analysis*.

Blowpipe, 2 lamps, 1 tube of alcohol, 1 tube of oil, platinum forceps and wire, glass tubing, beakers, funnel, test-tubes and watch glasses, diamond mortar, agate mortar, hammer, pliers, file, magnet, casserole, filter and test papers, 4 dry reagents in 1-oz. bottles, 10 dry reagents (tin, zinc, bone-ash, etc.) in small vials, 9 essential wet reagents in 1-oz. bottles. All in neat, serviceable fittings compactly arranged in compartments of special cloth-covered case. Complete, measures 6 in. wide, 6 in. high, and 14 in. long. \$21.00.

VIII.

ALPHABETICAL INDEX AND PRICE LIST.

THE INDEX includes the names of all known minerals: (1) distinct species, (2) varieties, (3) sub-species, (4) common synonyms. The numbers preceding the names refer to their order in Dana's Classification. Where "r" follows the name it is a sub-species, *related* to or near the species, the number of which precedes the name; when followed by "v," it is a *variety*; followed by "s," a *synonym*; followed by "ap.," a name in the *appendix*, nearest the number. "H" designates *Hydrocarbons*; "N," minerals, generally *new*, described in the Supplement.

PRICES are quoted on minerals in stock at the present time, or expected within a few weeks. Generally, those not on hand are exceedingly rare and almost unknown in any but the largest collections or museums. The prices given are for good typical examples; the lowest for study specimens of small size, the highest for choice cabinet specimens. Fragments for beginners can usually be furnished at less than the minimum figure; often very fine specimens are sold higher than the maximum.

A price list of this kind necessarily fails to give an idea as to quality. Many are well crystallized and of showy appearance, but a large proportion, especially among the rarer kinds, are only found in small crystals or massive. An illustrated account of important minerals will be found under "I. New Minerals." Lists of crystals, pseudomorphs and microscopic mounts are given under "II. Collections, Division D." III. Minerals sold by weight for use in chemical and technical laboratories. V. Gems and precious stones.

744.	Abraum salts, r., . . . \$	\$	373.	Agricolite, \$	\$
447.	Acadialite, v.,	.10 to 1.50	N.	Aguilarite,	.50 to 10.00
57.	Acanthite,	.75 " 4.00	138.	Aikinite,	.25 " 2.00
819.	Achrematite, r., . . .		248.	Ainalite, r.,	
426.	Achroite, v.,	.50 " 2.50	H.	Ajkite,	
366.	Achtaragditite, r., . .		391.	Åkermanite, r., . . .	
326.	Acmite,	.15 " 3.00	63.	Alabandite,	.15 " 3.00
338.	Actinolite, v.,	.05 " .75	746.	Alabaster, v.,	.05 " .35
563.	Adamite,	.25 " 3.00	325.	Alalite, v.,	.25 " 1.00
458.	Adamsite, v.,		118.	Alaskaite, s.,	1.00 " 3.00
N.	Adelite,		H.	Albertite,	.10 " .50
524.	Adelpholite, r., . . .		435.	Albine, v.,	.25 " 1.00
447.	Adipite, v.,		316.	Albite,	.05 " 3.00
313.	Adularia, v.,	.25 " 2.50	242.	Alexandrite, v., . . .	.50 " 2.50
445.	Ædelforsite, v., . . .		38.	Algodonite,	
326.	Ægirite, s.,	.15 " 3.00	483A.	Alipite, r.,	
N.	Ærinite,		45.	Alisonite, r.,	
532.	Æschynite,	.25 " 7.00	578.	Allactite,	.25 " 2.50
458.	Agalmatolite, r., . . .	.25 " 1.00	335.	Allagite, r.,	
210.	Agate, v.,	.10 " 2.00	409.	Allanite,	.10 " 1.00
210.	Agate-Jasper, v., . . .	.25 " 1.50	9.	Allemontite,	.25 " 2.50
306.	Agnesite, r.,		102.	Alloclasite,	.25 " 2.00

719.	Allomorphite, v., . \$	\$	221.	Antimonial Ocher, s., \$	.25 to \$.75
24.	Allopalladium, . . .		144.	“ Red Sil-	
498.	Allophane,	.15 to 1.25		ver, s.,	.50 “ 5.00
509.	Allophite, ap., . . .		10.	Antimony,	.25 “ 3.00
544.	Alluaudite, r., . . .		9.	“ Arsenical,	
370.	Almandite, v., . . .	.05 “ 3.00		s.,	.25 “ 2.50
510.	Alshedite, v., . . .	.25 “ 2.50	28.	“ Glance, s.,	.15 “ 10.00
278.	Alstonite, s.,	.25 “ 2.50	741.	Antlerite, r.,	
46.	Altaite,	.50 “ 2.50	N.	Antochroite,	
769.	Alum, Iron, s., . . .	.25 “ 1.00	175.	Antozonite, v., . . .	
764.	“ Native, s., . . .	.15 “ .75	455.	Antrimolite, v., . .	
	Alums, 764-770, . .		789.	Apatelite, r.,	.25 “ 1.50
736.	Alumian,		549.	Apatite,	.10 “ 4.00
791.	Aluminite,	.25 “ .75	270.	Aphrite, v.,	
212.	Alumocalcite, v., . .		426.	Aphrizite, v.,	
800.	Alumstone, s., . . .	.10 “ .75	481.	Aphrodite, r.,	.25 “ 1.50
800.	Alunite,	.10 “ .75	477.	Aphrosiderite, . . .	.25 “ 1.25
775.	Alunogen,	.25 “ .75	717.	Aphthitalite,	
462B.	Alurgite, r.,		770.	Apjöhnite,	
394.	Alvite, r.,	.50 “ 3.50	370.	Aplome, v.,	
17.	Amalgam,	.25 “ 3.00	435.	Apophyllite,	.10 “ 6.00
13.	“ Gold, r.,		509.	Aquacryptite, ap., .	.10 “ .75
17.	“ Silver, s.,	.25 “ 3.00	344.	Aquamarine, v., . .	.25 “ 3.50
787.	Amarantite,	.50 “ 2.50	223.	Aqueous Vapor, s., .	
315.	Amazonite, v., . . .		277.	Aragonite,	.15 “ 5.00
315.	Amazon stone, v., . .	.10 “ 7.50	H	Aragotite,	
H.	Amber, Succinite, . .	.25 “ 3.00	717.	Arcanite, r.,	
559.	Amblygonite,	.10 “ 1.00	509.	Arctolite, ap., . . .	
324.	Amblystegite, v., . .		418.	Ardennite,	.25 “ 1.50
H.	Ambrite,	.50 “ 1.50	675.	Arequipite, r., . . .	
H.	Ambrosine,		342.	Arfvedsonite,	.10 “ 1.00
470.	Amesite, r.,		45.	Argentiferous Ga-	
210.	Amethyst, v.,	.15 “ 4.00		lena, v.,	.25 “ 1.00
338.	Amianthus, s. v., . .	.05 “ 1.25	270.	Argentine, v.,	.10 “ .50
675.	Ammiolite, r., . . .	1.00 “ 3.00	42.	Argentite,	.25 “ 8.00
338.	Amphibole,	.05 “ 7.50	56.	Argentopyrite, r., . .	
611.	Amphithalite, r., . .		163.	Argyrodite,	2.00 “ 5.00
450.	Analcite,	.25 “ 2.00	56.	Argyropyrite, r., . .	
252.	Anatase, s.,	.75 “ 5.00	253.	Arkansite, v.,	.10 “ 3.50
398.	Andalusite,	.10 “ 2.00	780A.	Arnimite,	
318.	Andesine,	.05 “ .50	768.	Aromite, r.,	
318.	Andesite, s.,	.05 “ .50	17.	Arquerite, v.,	.25 “ 2.00
N.	Andorite,		535.	Arrhenite, ap., . . .	
370.	Andradite, v., . . .	.15 “ 1.50	35.	Arsenargentite, r., .	
656.	Andrewsite, r., . . .		8.	Arsenic,	.25 “ 1.75
721.	Anglesite,	.25 “ 10.00	9.	“ Antimonial, r.,	
722.	Anhydrite,	.05 “ .75	213.	“ White, s.,	
35.	Animikite, r.,		87.	Arsenical Cobalt, s.,	.10 “ 5.00
271A.	Ankerite,	.15 “ 2.00	71.	“ Nickel, s.,	.25 “ 3.00
602.	Annabergite,	.25 “ 1.50	98.	“ Pyrites, s.,	.10 “ 1.50
530.	Ännerödite,	.50 “ 2.50	145.	“ Red Silver,	
462B.	Annite, s.,	.25 “ 1.00		s.,	.50 “ 5.00
N.	Anomalite,	.25 “ 1.00	35.	“ Silver, r.,	
462.	Anomite, v.,		582.	Arseniopleite,	.50 “ 2.50
320.	Anorthite,	.25 “ 2.00	577.	Arseniosiderite, . . .	.25 “ 2.50
315A.	Anorthoclase,		8.	Arsenolamprite, r., .	
325.	Anthochroite, v., . .		213.	Arsenolite,	
337.	Anthophyllite, . . .	.10 “ .75	98.	Arsenopyrite,	.10 “ 1.50
505.	Anthosiderite, r., . .		108.	Arsenotellurite, ap.,	
H.	Anthracite,	.05 “ .25	338.	Asbeferrite, v., . . .	
H.	Anthracoxenite, . . .		338.	Asbestus, v.,	.05 “ 1.25
H.	Anthraxolite,		481.	Asbestus, v.,	.10 “ .75
481.	Antigorite, v.,		210.	Asbestus in Quartz, v.,	.50 “ 3.00
509.	Antillite, ap.,		269.	Asbolite, r.,	.10 “ 1.00
9.	Antimonial Arsenic, r.,		N.	Ascharite,	

211.	Asmanite, r.,	\$	\$	324.	Bastite, r.,	\$	\$
549.	Asparagus-stone, v., . . .	.50	to 2.00	285.	Bastnäsate,	.50	to 3.50
504.	Asperolite, v.,			462.	Bastonite, r.,	.50	" 1.50
H.	Asphaltum,	.05	" .25	H.	Bathvillite,		
462A.	Aspidolite, r.,			374.	Batrachite, v.,		
210.	Asteriated Quartz, s., . . .			261.	Bauxite,	.05	" .35
231.	" Sapphire, s.,	.50	" 3.00	629.	Bayldonite,	.75	" 3.00
325.	Asterosite, v.,			394.	Beccarite, v.,		
N.	Astochite,	.15	" 2.00	709.	Bechilite,	.15	" 1.50
758.	Astrakanite, v.,	.75	" 2.50	155.	Beegerite,		
514.	Astrophyllite,	.10	" 1.50	210.	Beekite, v.,	.05	" .35
193.	Atacamite,	.25	" 3.50	820.	Belonesite,		
584.	Atelestite,	1.00	" 3.00	507.	Bementite,	.50	" 4.00
193.	Atelite, r.,			648.	Beraunite,	.25	" 1.50
389.	Atheriasite, r.,			H.	Berengelite,		
289.	Atlasite, r.,			338.	Bergamaskite, v., . . .		
669.	Atopite,			453.	Bergmannite, v., . . .		
645.	Attacolite, r.,			479.	Berlauite, r.,		
394.	Auerbachite, r.,			645.	Berlinite, r.,		
395.	Auerlite, r.,			N.	Bernardinite,		
645.	Augelite, r.,			269.	Bernonite, ap.,		
325.	Augite, v.,	.10	" 2.50	473.	Berthierine, r.,		
333.	Auralite, r.,			119.	Berthierite,	.50	" 2.00
290.	Aurichalcite,	.50	" 3.00	422.	Bertrandite,	.50	" 6.00
236.	Automolite, v.,	.25	" 3.00	344.	Beryl,	.10	" 3.50
661.	Autunite,	.25	" 3.00	546.	Beryllonite,	.25	" 2.50
458.	Avalite, v.,	.50	" 1.50	49.	Berzelianite,	1.50	" 5.00
506.	Avasite, r.,			538.	Berzeliite,	.50	" 3.50
317.	Aventurine Feldspar, s. v.,	.25	" 3.00	680.	Beudantite,	.25	" 2.50
210.	Aventurine Quartz, v., . . .	.50	" 1.50	407.	Beustite, v.,	.50	" 2.50
25.	Awaruite, v.,			76.	Beyrichite,		
410.	Axinite,	.25	" 7.50	509.	Bhreckite, ap.,		
394.	Azorite, v.,			754.	Bieberite,		
289.	Azurite,	.10	" 6.00	H.	Bielzite,		
				497.	Biharite, r.,		
210.	Babel-quartz, v.,	.35	" 1.50	670.	Bindheimite,		
336.	Babingtonite,	.25	" 1.50	123.	Binnite,	1.00	" 4.00
N.	Baddeleyite,			320.	Biotite, v.,		
409.	Bagrathonite, v.,			462.	Biotite,	.05	" 3.00
325.	Baikalite, v.,			270.	Bird's-eye Marble, v., . . .	.10	" .75
H.	Baikerinite,			197.	Bischofite,	.25	" 1.00
234.	Balas Ruby, s. v.,	.25	" 3.00	217.	Bismite,	.50	" 2.50
479.	Baltimorite, r.,	.10	" 1.00	11.	Bismuth,	.25	" 3.00
509.	Balvraidite, ap.,			13.	Bismuth-gold, v., . . .		
399.	Bamlite, v.,			29.	Bismuthinite,	.25	" 3.00
210.	Banded Agate, v.,	.10	" 2.00	217.	Bismuth Ocher, s., . . .	.50	" 2.50
675.	Barcenite, r.,	.25	" 2.00	306.	Bismutite,	.25	" 2.00
509.	Barettite, ap.,			430.	Bismutoferrite, ap., . . .		
270.	Baricalcite, v.,			283.	Bismutosphärite, . . .		
719.	Barite,	.05	" 3.00	H.	Bitumen, s., Elaterite,	.10	" .50
342A.	Barkevikite,			H.	Bituminous Coal,	.05	" .25
83.	Barnhardtite, r.,	.35	" 1.50	N.	Bixbyite,	.25	" 6.00
610.	Barrandite,	.35	" 1.50	230.	Black Copper, s.,	.25	" 3.50
320.	Barsowite, r.,			338.	" Hornblende, v., . . .	.05	" 5.00
801.	Bartholomite, r.,			58.	" Jack, s.,	.10	" 2.00
430.	Barylite, ap.,	1.00	" 5.00	2.	" Lead, s.,	.10	" 1.50
354.	Barysilite,			270.	" Marble, v.,	.05	" .25
462.	Barytbiotite, v.,			462.	" Mica, s.,	.05	" 3.00
719.	Barytes, s.,	.10	" 3.00	210.	" Tourmaline in Quartz, v.,	.15	" .50
282.	Barytocalcite,	.25	" 1.50	45.	Bleischweif, v.,		
720.	Barytocelestite, v.,			58.	Blende, s.,	.10	" 2.00
210.	Basanite, v.,	.15	" .50	N.	Bliabergite,		
233.	Basanomelan, v.,			758.	Blödite,	.75	" 2.50
N.	Basiliite,						

535.	Blomstrandite, ap., \$	\$		409.	Bucklandite, v., . . \$	\$	
210.	Blood-stone, v., . . .	.25 to	1.50	210.	Buhrstone, v., . . .	.05 to	.25
597.	Blue Iron Earth, s., . .	.15 "	4.00	227.	Bunsenite,		
N.	Blueite,			N.	Burmite,		
755.	Blue Vitriol, s., . . .	.10 "	1.50	770.	Bushmanite, r., . . .		
599.	Bobierite,			173.	Bustamentite, r., . . .		
409.	Bodenite, r.,			335.	Bustamite, v.,		
269.	Bog Manganese, r., . .	.10 "	1.50	H.	Byerite,		
259.	" Ore, v.,	.05 "	.35	338.	Byssolite, v.,	.10 "	1.50
493.	Bole, v.,	.10 "	.50				
N.	Boléite,	.25 "	8.00	603.	Cabrerite,		
108.	Bolivianite, ap., . . .			212.	Cacholong, v.,	.25 "	1.50
29.	Bolivite, r.,			392.	Cacoclasite, r.,	.15 "	2.00
719.	Bologna Stone, v., . .	.25 "	1.00	647.	Cacoxenite,	.25 "	2.00
375.	Boltonite, v.,	.10 "	.75	210.	Cairngorm Stone, s., .	.05 "	3.00
H.	Bombicite,	.25 "	1.50	H.	Caking (coking) Coal,	.05 "	.25
698.	Boracite,	.25 "	3.00	423.	Calamine,	.10 "	4.00
707.	Borax,	.15 "	.75	105.	Calaverite, r.,	.50 "	4.00
169.	Bordosite, r.,			719.	Calcareobarite, v., . .		
265.	Boric Acid, s.,	.35 "	1.50	270.	Calcareous Marl, v., .		
653.	Borickite,	.50 "	2.00	720.	Calciocelstite, v., . .		
78.	Bornite,	.15 "	2.00	652.	Calcioferrite,		
708.	Boronatrocaltite, s., .			395.	Calciorthorite, r., . .		
1.	Bort, v.,	.50 "	5.00	565.	Calciovulborthite, . .		
798.	Botryogen,	.25 "	1.50	270.	Calcite,	.05 "	6.00
401.	Botryolite, v.,			228.	Calcozincite, v., . . .	.10 "	3.00
139.	Boulangerite,	.25 "	2.00	270.	Calc Spar, s.,	.05 "	6.00
751.	Bourbolite, r.,			270.	Calc Tufa, v.,	.05 "	.50
136.	Bournonite,	.35 "	3.50	370.	Calderite, v.,		
759.	Boussingaultite, . . .			739.	Caledonite,	.50 "	3.00
481.	Bowenite, v.,	.15 "	.75	612.	Callainite,		
566.	Brackebuschite, . . .	.50 "	1.50	164.	Calomel,	1.00 "	15.00
465.	Brandisite, v.,	.25 "	1.50	719.	Calstronbarite, v., . .		
591.	Brandtite,	.50 "	5.00	551.	Campylite, v.,	.25 "	3.50
247.	Braunite,	.15 "	2.00	325.	Canaanite, v.,		
509.	Bravaisite, ap., . . .			360.	Cancrinite,	.10 "	1.00
N.	Brazilite,			N.	Canfieldite,		
270.	Breccia Marble, v., . .	.15 "	.75	H.	Cannel Coal,	.05 "	.25
338.	Breislakite, v.,	.50 "	5.00	67.	Cantonite, r.,		
72.	Breithauptite,	.35 "	2.50	445.	Caporicianite, v., . . .		
272.	Brunnerite, s.,	.25 "	1.50	210.	Capped Quartz, v., . .	.50 "	1.50
439.	Brewsterite,	.50 "	3.00	347.	Cappelenite,		
N.	Brewsterlinite,			729.	Caracolite,		
3.	Brimstone, s.,	.15 "	2.00	1.	Carbonado, v.,	2.00 "	10.00
153.	Brittle Silver, s., . . .	.25 "	6.00	370.	Carbuncle, s. v.,	.50 "	3.00
740.	Brochantite,	.25 "	2.00	541.	Carminite,		
711.	Bröggerite, v.,			201.	Carnallite,	.15 "	.50
278.	Bromlite,	.25 "	2.50	210.	Carnelian, v.,	.10 "	.50
171.	Bromyrite,	1.00 "	5.00	498.	Carolathine, r.,	.25 "	1.50
132.	Brongniardite,			424.	Carpholite,	.25 "	2.00
323.	Bronzite, v.,	.05 "	.50	790.	Carphosiderite,		
253.	Brookite,	.10 "	3.50	82.	Carrollite,		
259.	Brown Clay - iron-			540.	Caryinite,	1.00 "	3.00
	stone, v.,	.05 "	.35	349.	Caryocerite,		
H.	Brown Coal,	.05 "	.25	508.	Caryopillite,	.25 "	3.00
259.	Brown Hematite, s., . .	.05 "	1.50	248.	Cassiterite,	.10 "	2.50
257.	Brown Iron-ore, s., . .	.10 "	3.00	783.	Castanite,		
259.	Brown Iron-stone, s., .	.05 "	1.50	510.	Castellite, r.,		
271.	Brown Spar, s.,	.15 "	2.00	78.	Castillite, r.,	1.00 "	2.50
262.	Brucite,	.25 "	6.00	310.	Castorite, v.,	.50 "	3.00
H.	Brücknerellite,			N.	Caswellite,	.10 "	1.50
175.	Bruichachite, r.,			346.	Catapleiite,	.50 "	2.50
270.	Brunnerite, v.,			458.	Cataspilite, r.,	.10 "	.50
618.	Brushite,			500.	Catlinite, ap.,	.05 "	.25
H.	Bucaramangite,			210.	Cat's-Eye, v.,	.25 "	2.50

242.	Cat's-Eye,	\$.25 to \$5.00	729.	Chlorothionite, r., . . .	\$
210.	Cavernous Quartz, v., . . .	.25 " 2.00	712.	Chlorothorite, r., . . .	
361.	Cavolinite, r.,	.25 " 1.00	596.	Chlorotile, r.,	
489.	Celadonite,	.25 " 1.00	184.	Chodneffite, r.,	
N.	Celestialite,		572.	Chondarsenite,	
720.	Celestite,	.05 " 10.00	415.	Chondrodite,	.15 to 3.50
719.	Celestobarite, v.,		N.	Chondrostibian,	
501.	Cenosite,	.75 " 2.50	509.	Chonicrite, ap.,	
435.	Centrallassite, r.,		H.	Chrismatite,	
169.	Centargyrite,	.25 " 6.00	320.	Christianite, v.,	
353.	Cerasite, v.,	.15 " 2.00	58.	Christophite, v.,	
425.	Cerite,	.15 " 2.00	325.	Chrome-diopside, v.,	
481.	Cerolite, r.,		500.	Chrome Ocher, ap.,	
281.	Cerussite,	.10 " 6.00	462.	Chromglimmer, v.,	
221.	Cervantite,	.15 " .75	241.	Chromic Iron, s.,	.05 " .35
234.	Ceylonite, v.,	.10 " 1.00	241.	Chromite,	.05 " .35
447.	Chabazite,	.10 " 4.00	370.	Chromium Garnet	
755.	Chalcanthite,	.10 " 1.50	(s. Uvarovite), v.,	.50 " 2.00	
210.	Chalcedony, v.,	.10 " 2.00	241.	Chrompicotite, v.,	
54.	Chalcocite,	.15 " 6.00	242.	Chrysoberyl,	.25 " 2.50
474.	Chalcodite, v.,	.15 " 1.25	504.	Chrysocolla,	.10 " 2.00
811.	Chalcomenite,		376.	Chrysolite,	.05 " .50
435.	Chalcomorphite, r.,		210.	Chrysoprase, v.,	.50 " 2.50
268.	Chalcophanite,	.10 " 3.00	481.	Chrysotile, v.,	.10 " .75
636.	Chalcophyllite,	.25 " 2.00	606.	Churchite,	
83.	Chalcopyrite,	.10 " 3.00	495.	Cimolite,	.15 " .75
81.	Chalcopyrrhotite, r.,		66.	Cinnabar,	.15 " 7.50
656.	Chalcosiderite,	.25 " 3.50	370.	Cinnamon-stone, v.,	.15 " 5.00
117.	Chalcostibite,		676.	Ciplyte, r.,	
224.	Chalcotrichite, v.,	.25 " 4.00	576.	Cirrolite,	
456.	Chalilite, v.,		210.	Citrine (Yellow	
270.	Chalk, v.,	.05 " .25	Quartz), v.,	.25 " 1.25	
484.	" French, s. v.,	.05 " .35	158.	Clarite, r.,	
273.	Chalybite, s.,	.05 " 3.00	215.	Claudetite,	
25.	Chalypite, r.,		47.	Clausthalite,	.50 " 3.00
473.	Chamosite, r.,	.25 " 1.00	232.	Clay Iron-stone, v.,	.05 " .35
H.	Chemawinitite,		149.	Clayite, r.,	
655.	Chenevixite,	.50 " 2.00	316.	Cleavelandite, v.,	.05 " .50
550.	Cherokine, v.,		58.	Cleophane, v.,	.10 " .50
210.	Chert, v.,	.05 " .25	711.	Cleveite, v.,	1.00 " 3.50
289.	Chessylite, s.,	.25 " 4.00	1.	Cliftonite, r.,	
315.	Chesterlite, v.,	.15 " 1.50	468.	Clinocllore,	.10 " 3.50
398.	Chiastolite, v.,	.10 " 2.00	571.	Clinoclasite,	.25 " 2.00
649.	Childrenite,	.25 " 3.50	801.	Clinocrocoite, r.,	
567.	Chileite, r.,		416.	Clinohumite,	.50 " 2.50
40.	Chilenite,	.50 " 3.00	801.	Clinophaeite, r.,	
683.	Chili Saltpeter, s.,	.10 " .75	465.	Clintonite, v.,	.15 " 2.00
492.	China Clay, s.,	.05 " .35	H.	Cloustonite,	
184.	Chiolite,	.50 " 1.50	450.	Cluthalite, r.,	
111.	Chiviatite,		H.	Coal, Anthracite,	.05 " .25
323.	Chladnite, v.,		H.	" Bituminous,	.05 " .25
88.	Chloanthite,	.25 " 3.00	H.	" Brown,	.05 " .25
179.	Chloralluminite, r.,		H.	" Caking,	.05 " .25
549.	Chlor-apatite, v.,		H.	" Cannel,	.05 " .25
N.	Chloroarsenian,		H.	" Mineral,	.05 " .25
457.	Chlorastrolite, ap.,	.10 " 5.00	H.	" Non-Caking,	.05 " .25
	Chlorite Group, 468-479.		601.	Cobalt Bloom, s.,	.25 " 3.00
210.	Chloritic Quartz, v.,	.25 " 3.00	89.	" Glance, s.,	.10 " 5.00
466.	Chloritoid,	.10 " .75	89.	Cobaltite,	.10 " 5.00
176.	Chloromagnesite,		811.	Cobaltomenite, r.,	
328.	Chloromelanite, v.,		79.	Cobalt Pyrites, s.,	.50 " 3.00
505.	Chloropal,	.10 " .75	173.	Coccinite, r.,	
479.	Chlorophaeite, r.,	.10 " .75	325.	Coccolite, v.,	.05 " .50
353.	Chlorophyllite, r.,	.10 " .50	96.	Cockscorn Pyrites,	
234.	Chlorospinel, v.,		v.,	.10 " 1.50	

645.	Ceruleolactite, r., .	\$.10 to \$.75	N.	Cuprocassiterite, . .	\$
704.	Colemanite,	.10 " 7.00	564.	Cuprodesclioizite, v.,	.25 to 2.50
586.	Collophanite,	.50 " 2.00	N.	Cuproiodyrite, . .	
499.	Collyrite,	.50 " 1.50	754.	Cupromagnesite, r.,	
370.	Colophonite, v., . .	.25 " 1.00	45.	Cuproplumbite, r., .	
62.	Coloradoite,	.35 " 2.50	815.	Cuprotungstite, . .	
525.	Columbite,	.15 " 7.50	413.	Cuspidine,	
212.	Common Opal, v., .	.10 " 3.00	400.	Cyanite,	.10 " 1.50
37.	Condurrite, v., . . .	.50 " 2.00	504.	Cyanochalcite, v., .	
628.	Conichalcite,	.25 " 3.00	761.	Cyanochroite,	
486.	Connarite,		781.	Cyanotrichite,	.50 " 3.00
731.	Connellite,	1.00 " 4.00	327.	Cymatolite, r., . . .	
460.	Cookeite, r.,	.10 " 1.50	393.	Cyprine, v.,	.25 " 1.25
H.	Copalite,	.15 " .75	795.	Cyprusite,	
H.	Copalite cont.insects,	.25 " 2.00	394.	Cyrtolite, r.,	.25 " 1.50
784.	Copiapite,	.25 " 2.00			
15.	Copper,	.15 " 2.00	676.	Dahllite,	.50 " 1.50
108.	Copper and Silver Sulphide, ap., . . .		57.	Daleminzite, r., . . .	
751.	Copperas, s.,	.15 " 2.00	458.	Damourite, v.,	.10 " .75
54.	Copper Glance, s., .	.15 " 6.00	98.	Danaite, v.,	
504.	Copper Pitch-blende, v.,		367.	Danalite,	.50 " 1.50
83.	Copper Pyrites, s., .	.10 " 3.00	396.	Danburite,	.25 " 2.00
659.	Copper-Uranite, s., .	.25 " 3.50	338.	Dannemorite, v., . . .	.75 " 2.00
772.	Coquimbite,	.15 " 2.00	471.	Daphnite,	
711.	Coracite, r.,		689.	Darapskite,	
353.	Cordierite, s.,	.10 " 3.50	401.	Datolite,	.15 " 3.00
634.	Cornwallite,		194.	Daubréeite,	
675.	Coronguite, r.,		80.	Daubreelite,	
470.	Corundophilite, . . .	.15 " 1.00	344.	Davidsonite, v., . . .	
231.	Corundum,	.10 " 3.00	190.	Daviesite,	
91.	Corynite,	.50 " 2.50	509.	Davreuxite, ap., . . .	.50 " 2.00
128.	Cosalite,	.50 " 2.50	361.	Davyne, r.,	.25 " 2.50
459.	Cossaite, v.,		293.	Dawsonite,	.25 " 1.50
343.	Cossyrite, v.,		564.	Dechenite, r.,	
180.	Cotunnite,	.50 " 2.50	506.	Degeröite, v.,	
388.	Cousseranite, v., . .	.15 " .75	269.	Delafossite, ap., . . .	
67.	Covellite,	.50 " 2.50	648.	Delavauxite, r., . . .	.25 " 1.50
N.	Craigtonite,		478.	Delessite,	.15 " .75
245.	Crednerite,		370.	Demantoid, v.,	
233.	Crichtonite, v., . . .		504.	Demidovite, v., . . .	
211.	Cristobalite, r., . . .		N.	Derbylite,	
341.	Crocidolite,	.10 " 1.00	509.	Dermatin, ap.,	
725.	Crocoisite, s.,	.50 " 5.00	483A.	De Saulesite, r., . . .	.50 " 3.00
725.	Crocoite,	.50 " 5.00	564.	Desclioizite,	.25 " 5.00
472.	Cronstedtite,	.25 " 5.00	443.	Desmine, s.,	.10 " 3.00
53.	Crookesite,		677.	Destinezite, v., . . .	.25 " 2.00
N.	Crossite,		482.	Deweylite,	.15 " .75
98.	Crucite, r.,		476.	Diabantite,	.10 " .75
183.	Cryolite,	.10 " 2.00	324.	Diaclasite, r.,	
461.	Cryophyllite, v., . .	.50 " 2.00	677.	Diadochite,	.25 " 2.00
553.	Cryphiolite, r., . . .		325.	Diallage, v.,	.10 " 1.00
185.	Cryptohalite, r., . . .		274.	Diallogite, s.,	.15 " 5.00
708.	Cryptomorphite, r., .		1.	Diamond,	.50 " 10.00
N.	Cryptovalite,	1.00 " 7.50	134.	Diaphorite,	1.00 " 3.00
81.	Cubanite,	.10 " 1.00	256.	Diaspore,	.25 " 10.00
480.	Culsageeite, v., . . .		338.	Diastatite, v.,	
N.	Cumengéite,	.25 " 7.50		Diatomaceous Earth,	.05 " .35
338.	Cummingtonite, v., .	.25 " 1.50	588.	Dickinsonite,	
14.	Cupiferous silver, v.,		458.	Didymite, v.,	
224.	Cuprite,	.10 " 7.50	771.	Dietrichite,	.50 " 2.00
549.	Cupro-apatite, v., . .		N.	Dietzeite,	
112.	Cuprobismutite, . . .		569.	Dihydrite,	.50 " 3.50
N.	Cuprocalcite,		716.	Dihydro-thenardite, r.,	
			504.	Dillenburgite, v., . .	

499.	Dillnite, r., \$	\$	303.	Emerald, Nickel, s., \$	.25 to \$1.50
27.	Dimorphite, r., . .		231.	Emery, v.,	.10 " .50
H.	Dinite,		809.	Emmonsite,	
325.	Diopside, v.,	.15 to 2.50	116.	Emplectite,	.50 " 2.00
383.	Diopase,	1.00 " 15.00	158.	Enargite,	.15 " 2.50
388.	Dipyre, v.,	.25 " 1.50	270.	Encrinal Marble,	
400.	Disthene, s.,	.10 " 1.50		v.,	.10 " .50
585.	Dittmarite, r., . . .		551.	Endlichite, r., . . .	.25 " 9.00
112.	Dognacskaite, r., . .		323.	Enstatite,	.05 " 3.50
270.	Dog-tooth Spar, v., .	.10 " 6.00	805.	Enysite, r.,	.25 " 2.00
738.	Dolerophanite, . . .		819.	Eosite, r.,	
271.	Dolomite,	.05 " 2.50	650.	Eosphorite,	
37.	Domeykite,	.50 " 3.50	509.	Ephesite, ap., . . .	
H.	Dopplerite,		161.	Epiboulangerite, . .	
270.	Doubly Refracting		479.	Epichlorite, r., . .	
	Spar, s.,	.15 " 4.00	N.	Epiddymite,	
200.	Douglasite,		407.	Epidote,	.10 " 5.00
719.	Dreelite, r.,		210.	Epidote in Quartz,	
210.	Drusy Quartz, v., . .	.05 " .25		v.,	1.00 " 2.00
275.	Dry-bone, s. v., . . .	.10 " .75	162.	Epigenite,	
83.	Ducktownite, r., . .		379.	Epigenite, r., . . .	
480.	Dudleyite, r.,	.25 " 1.00	585.	Epiglaubite, r., . .	
573.	Dufrenite,	.15 " 1.50	479.	Epiphane, r., . . .	
127.	Dufrenoyite,	.25 " 3.00	549.	Epiphosphorite, r.,	
479.	Dumasite, r.,		457.	Epispärite, ap., . .	
427.	Dumortierite,	.15 " 3.00	440.	Epistilbite,	.50 " 8.00
768.	Dumreicherite, r., . .		748.	Epsomite,	.25 " 2.00
509.	Duporthite, ap., . . .		748.	Epsom Salt, s., . . .	.25 " 2.00
558.	Durangite,	.50 " 2.00	350.	Erdmannite, r., . .	
810.	Durdenite,		402.	" r.,	
141.	Dürfeldtite, r., . . .		N.	Erilite,	
H.	Duxite,	.10 " .75	568.	"	.25 " 2.00
519.	Dysanalyte,	.05 " 2.00	386.	Ersbyite, v.,	
35.	Dyscrasite,	.50 " 3.50	78.	Erubescite, s., . . .	.15 " 2.00
236.	Dysluite, v.,	.25 " 6.00	795.	Erusibite, r., . . .	
H.	Dysodile,		601.	Erythrite,	.25 " 3.00
335.	Dyssnite, r.,		193.	Erythrocalcite, r., .	
458.	Dysyntribite, r., . .		199.	Erythrosiderite, . .	
			69.	Erythrozoine, r., . .	
673.	Ecdemite,	.25 " 3.50	407.	Escherite, v.,	
329.	Edelforsite, v.,		370.	Essonite, v.,	.15 " 5.00
338.	Edenite, v.,	.10 " .75	803.	Ettringite,	
452.	Edingtonite,	2.00 " 12.00	51.	Eucairite,	
25.	Edmonsonite, r., . . .		632.	Euchroite,	.25 " 2.50
719.	Eggonite, r.,		403.	Euclase,	2.00 " 15.00
570.	Ehlite, r.,		345.	Eucolite, v.,	.25 " 3.50
500.	Ehrenbergite, ap., . .		510.	Eucolite-titanite, v.,	
262.	Eisenbrucite, r., . . .		395.	Eucrasite, r.,	
233.	Eisenrosen, v. (or		358.	Eucryptite,	
	v. 232),	.50 " 5.00	345.	Eudialyte,	.25 " 3.50
479.	Ekmannite, r.,		312.	Eudidymite,	.25 " 5.00
357.	Elæolite, v.,	.10 " 1.00	450.	Eudnophite, v., . . .	
H.	Elastic Bitumen (s.,		462.	Eukamptite, r., . . .	
	Elaterite),	.10 " .50	368.	Eulytite,	.50 " 3.00
H.	Elaterite,	.10 " .50	253.	Eumanite, r.,	
13.	Electrum, v.,	1.00 " 6.00	H.	Euosmite,	
648.	Eleonorite, v.,	.50 " 2.00	459.	Euphyllite, r., . . .	
N.	Elfstorpite,		549.	Eupyrchroite, v., . .	.25 " 1.25
453.	Ellagite, r.,		479.	Euralite, r.,	
N.	Ellonite,		564.	Eusynchite, r., . . .	
183.	Elpasolite, r.,		450.	Euthallite, v.,	
N.	Elpidite,		534.	Euxenite,	.25 " 5.00
N.	Elroquite,	.10 " 1.50	645.	Evansite,	.25 " 2.00
170.	Embolite,	.25 " 3.00	743.	Exanthalose, r., . .	
344.	Emerald, v.,	.25 " 3.50	210.	Eye-Agate, v.,	.25 " 1.50

148.	Fahlerz, s.,	\$.15 to \$5.00	443.	Foresite, r.,	\$.50 to \$2.50
353.	Fahlunite, r.,		375.	Forsterite,	.35 " 1.00
592.	Fairfieldite,		210.	Fortification Agate,	
N.	Falkenhaynite,			v.,	.10 " 2.00
159.	Famatinite,		N.	Fouquéite,	
453.	Fargite, v.,		335.	Fowlerite, v.,	.10 " 10.00
456.	Faroselite, v.,		549.	Francolite, v.,	.25 " 4.00
325.	Fassaite, v.,	.25 " 1.50	N.	Frankelite,	
451.	Faujasite,	.25 " 1.50	708.	Franklandite, r.,	
750.	Fauserite, r.,		239.	Franklinite,	.10 " 7.50
377.	Fayalite,		149.	Fredricite, v.,	
130.	Feather Ore, s.,	.25 " 3.50	148.	Freibergite, s.,	.25 " 1.00
	Feldspar Group, 313-320,		135.	Freieslebenite,	2.00 " 5.00
316.	" Soda, s.,	.05 " 3.00	484.	French Chalk, s.v.,	.05 " .35
793.	Felsöbanyite,		395.	Freyalite, r.,	
812.	Ferberite, r.,		384.	Friedelite,	.50 " 3.50
523.	Fergusonite,	.25 " 2.00	56.	Frieseite, v.,	
376.	Ferrite, r.,		665.	Fritzscheite, r.,	
270.	Ferrocaltite, v.,	.35 " 4.00	458.	Fuchsinite, v.,	10 " 1.25
89.	Ferrocobaltite, v.,		N.	Fuggerite,	
526A.	Ferro-ilmenite, r.,		500.	Fuller's Earth, ap.,	
777.	Ferronitrite,		325.	Funkite, v.,	
N.	Ferrosilicate,		389.	Gabronite, r.,	
583.	Ferrostibian, r.,		404.	Gadolinite,	.25 " 8.00
810.	Ferrotellurite, r.,		236.	Gahnite,	.25 " 6.00
233.	Ferrozincite, r.,		455.	Galactite, v.,	
210.	Ferruginous Quartz,		45.	Galenite,	.10 " 2.00
	v.,	.10 " .50	45.	Galenite, s.,	.10 " 2.00
719.	Fetid Barite, v.,	.10 " .50	118.	Galenobismutite,	.35 " 2.00
270.	" Calcite, v.,		338.	Gamsigradite, v.,	
505.	Fettbol, v.,		355.	Ganomallite,	.25 " 3.50
788.	Fibroferrite,	.25 " 2.00	N.	Ganomattite,	
399.	Fibrolite, v.,	.10 " .75	432.	Ganophyllite,	.75 " 2.00
H.	Fichtelite,	.25 " 1.00	370.	Garnet,	.05 " 5.00
191.	Fiedlerite,	2.00 " 5.00	483A.	Garnierite,	.10 " .75
149.	Fieldite, r.,		297.	Gay-lussite,	.15 " 5.00
589.	Fillowite,		207.	Gearsutite,	.25 " 2.00
212.	Fiorite, v.,	.25 " 2.00	H.	Gedanite,	
212.	Fire-opal, v.,	.10 " 3.00	337A.	Gedrite,	
640.	Fischerite,		392.	Gehlenite,	.25 " 2.00
250.	Flèches d'Amour, s.,	.25 " 9.00	N.	Geikielite,	1.00 " 4.00
210.	Flexible Sandstone,		483.	Genthite,	.15 " 1.50
	v.,	.15 " 1.50	H.	Geocerellite,	
580.	Flinkite,	1.00 " 5.00	H.	Geocerite,	
210.	Flint, v.,	.05 " .25	152.	Geocronite,	
212.	Float-stone, v.,		H.	Geomyricite,	
277.	Flos-ferri, v.,	.15 " 5.00	688.	Gerhardtite,	
203.	Fluellite,		90.	Gersdorffite,	.50 " 2.50
196.	Fluocerite,	.75 " 5.00	97.	Geyerite, v.,	
175.	Fluor, s.,	.05 " 3.50	212.	Geyserite, v.,	.25 " 2.00
549.	Fluor-apatite, v.,	.05 " 4.00	264.	Gibbsite,	.10 " .50
175.	Fluorite,	.05 " 3.50	458.	Giesseckite, r.,	.25 " 5.00
175.	Fluor spar, s.,	.05 " 3.50	458.	Gigantolite, r.,	
195.	Fluosiderite, r.,		458.	Gilbertite, v.,	.50 " 2.00
N.	Folgerite,		506.	Gillingite, r.,	
106.	Foliated Tellurium,		H.	Gilsonite, s. Uintah-	
	s.,	.75 " 5.00		ite,	.15 " .75
270.	Fontainebleau Lime-		509.	Ginilsite, ap.,	
	stone, v.,	.50 " 4.00	212.	Girasol, v.,	.25 " 1.00
	Fool's gold, s., 83, 85,	.10 " 3.50	444.	Gismondite,	.25 " 2.00
N.	Footelite,	.10 " 3.50	399.	Glancespar, r.,	
625.	Forbesite,		505.	Glasurite, r.,	
509.	Forchammerite, ap.,		718.	Glauberite,	.15 " 3.50
212.	Forcherite, v.,	.50 " 1.50	743.	Glauber Salt, s.,	.25 " 1.50

101.	Glaucodot,	\$.15 to \$2.00	733.	Hanksite,	\$.15 to \$7.50
387.	Glaucolite, v., . . .		623.	Hannayite,	
490.	Glaucosite,	.05 " .35	442.	Harmotome,	.25 " 3.00
339.	Glaucophane,	.25 " 1.00	455.	Harringtonite, v., .	
97.	Glaucopyrite, s., . .	.15 " .50	54.	Harrisite, r.,	
H.	Glessite,		412.	Harstigit,	
376.	Glinkite, v.,		H.	Hartite,	.25 " 1.00
648.	Globosite, r., . . .		H.	Hatchettite,	
792.	Glockerite,		521.	Hatchettolite, . . .	
452.	Glottalite, r., . . .		N.	Hauchecornite, . . .	
448.	Gmelinite,	.25 " 5.00	86.	Hauerite,	.25 " 5.00
13.	Gold,	.50 " 15.00	462.	Haughtonite, v., . .	
13.	Gold Amalgam, r., .		243.	Hausmannite,	.15 " 4.00
344.	Golden Beryl, v., . .	.50 " 5.00	N.	Hautefeullite,	
344.	Goshenite, v., . . .	.25 " 1.50	363.	Haüyinite,	.25 " 5.00
749.	Goslarite,	.50 " 2.50	447.	Haydenite, v., . . .	.25 " 2.00
257.	Göthite,	.10 " 3.00	709.	Hayesine, r.,	
210.	Göthite in Quartz, v.,	.50 " 3.00	210.	Haytorite, v., . . .	
657.	Goyazite,		719.	Heavy Spar, s., . . .	.05 " 3.00
H.	Grahamite,	.15 " .75	325.	Hectorite, r.,	
505.	Graminite, v., . . .		325.	Hedenbergite, v., . .	.25 " 5.00
211.	Granuline, r., . . .		552.	Hedyphane, r., . . .	.50 " 3.50
104.	Graphic Tellurium,		706.	Heintzite,	
	s.,	.75 " 5.00	N.	Heldburgite,	
2.	Graphite,	.10 " 1.50	H.	Helenite,	
N.	Graphitite,		210.	Heliotrope, v., . . .	.25 " 1.50
2.	Graphitoid, r., . . .		462B.	Helvetan, r.,	
479.	Grastite, r.,		366.	Helvite,	.25 " 2.00
148.	Gray Copper Ore, s.,	.15 " 5.00	627.	Hemafibrite,	
68.	Greenockite,	.50 " 4.00	232.	Hematite,	.05 " 4.00
212.	Green-opal, v., . . .	.10 " 3.00	581.	Hematolite,	
510.	Greenovite, v., . . .	.35 " 3.00	46.	Henryite, r.,	
555.	Gripbite, r.,	.25 " 2.00	655.	Henwoodite, r., . . .	.50 " 3.50
469.	Grochauite, r., . . .		66.	Hepatic Cinnabar, v.,	
448.	Groddeckite, r., . . .	.50 " 2.00	235.	Hercynite,	.35 " 1.50
509.	Groppite, ap.,		547.	Herderite,	1.00 " 7.00
370.	Grossularite, v., . . .	.10 " 5.00	526A.	Hermannolite, r., . .	
510.	Grothite, v.,		780.	Herregrundite, . . .	.25 " 3.50
75.	Grünaüite, r.,		275.	Herrerite, v.,	
338.	Grünerite, v.,		447.	Herschellite, v., . . .	.25 " 6.00
59.	Guadalcazarite, r., .		N.	Hessenbergite,	
30.	Guanajuatite,	1.00 " 3.00	43.	Hessite,	1.00 " 6.00
585.	Guanapite, r.,		269.	Heterolite, ap., . . .	.15 " 2.00
549.	Guano, r.,	.10 " .35	269.	Heterogenite, ap., . .	
742.	Guanovulite, r., . . .		130.	Heteromorphite, v., .	.15 " .50
585.	Guanoxalate, r., . . .		544.	Heterosite, r.,	
512.	Guarinite,	.50 " 1.50	269.	Heubachite, ap., . . .	
110.	Guejarite,		438.	Heulandite,	.10 " 4.00
142.	Gütermannite,	.25 " 1.50	338.	Hexagonite, v., . . .	.10 " .75
497.	Gümbelite, r.,		302.	Hibbertite, r.,	
712.	Gummite,	.25 " 3.00	327.	Hiddenite, v.,	.25 " 3.50
175.	Gunnisonite, r., . . .		531.	Hielmite,	.50 " 2.00
H.	Guyaquillite,		185.	Hieratite,	
482.	Gymnite, s.,	.15 " .75	338.	Hillängsite, v.,	.75 " 2.00
746.	Gypsum,	.05 " 4.00	706.	Hintzeite, s.,	
434.	Gyrolite,		334.	Hiortdahlite,	.50 " 2.00
			H.	Hircite,	
206.	Hagemannite, r., . . .	.10 " .50	506.	Hisingerite,	.25 " 1.25
616.	Haidingerite,		270.	Hislopite, v.,	
166.	Halite,	.10 " 1.50	N.	Hoefelite,	
480.	Hallite, r.,	.15 " 1.00	600.	Höernesite,	
493.	Halloysite,	.10 " .50	H.	Hofmannite,	
769.	Halotrichite,	.15 " 1.00	787.	Hohmannite, r., . . .	.50 " 2.50
696.	Hambergite,		83.	Homichlin, r.,	
548.	Hamlinite,		402.	Homilite,	.75 " 2.50

587.	Hopeite,	\$	\$	509.	Hydrosilicite, ap.,	\$	\$
74.	Horbachite, r., . . .	1.00	to 5.00	468A.	Hydrotalc, v., . . .		
338.	Hornblende, s.v., . .	.05	" 5.00	266.	Hydrotalcite, . . .	.10	to 1.00
210.	Hornblende in			379.	Hydrotrophroite, r.,	1.00	" 3.50
	Quartz, v.,	.25	" 1.00	519.	Hydrotitanite, r., . .	.05	" 1.00
169.	Hornsilver, s.,	.25	" 4.00	291.	Hydrozincite,	.25	" 1.50
210.	Horn Stone (Chert),			458.	Hygrophilite, r., . .		
	v.,	.05	" .25	324.	Hypersthene,	.15	" 4.00
36.	Horsfordite,			430.	Hypochlorite, ap., . .		
376.	Hortonolite, r., . . .			316.	Hyposclerite, v., . .		
266.	Houghite, r.,			233.	Hystatite, v.,		
293.	Hovite, r.,						
N.	Howardite,			223.	Ice,		
701.	Howlite,	.25	" 1.50	270.	Iceland Spar, v., . . .	.15	" 4.00
166.	Huantajayite, r., . .			N.	Iddingsite,		
45.	Huascalite, r.,			393.	Idocrase, s.,	.10	" 3.00
813.	Hübnerite,	.25	" 2.00	H.	Idrialite,		
325.	Hudsonite, v.,			267.	Igelströmite, s., . . .	.50	" 1.50
479.	Hullite, r.,			378.	Igelströmite, v., . . .		
823.	Humboldtine,			802.	Ignatievite, r., . . .		
H.	Huminite,			774.	Ihleite,		
414.	Humite,	.50	" 2.50	747.	Ilesite,		
H.	Humus acid,			233.	Ilmenite,	.05	" .75
35.	Hunttilite, r.,	.25	" 5.00	250.	Ilmenorutile, v., . . .		
624.	Hureaulite,			219.	Ilsemanite, r.,		
320.	Huronite, r.,			417.	Ilvaite,	.25	" 2.00
500.	Hverlera, ap.,			320.	Indianite, v.,		
394.	Hyacinth, v.,	.25	" 3.00	426.	Indicolite, v.,	.25	" 10.00
212.	Hyalite, v.,	.25	" 2.00	431.	Inesite,	.50	" 3.00
314.	Hyalophane,			212.	Infusorial Earth, v.,	.05	" .35
376.	Hyalosiderite, v., . .	.15	" 1.00	172.	Iodobromite,		
356.	Hyalotekite,			173.	Iodyrite,	.75	" 6.00
264.	Hydrargillite, s., . .			353.	Iolite,	.10	" 3.50
269.	Hydrated Titanic			H.	Ionite,		
	Oxide, ap.,			21.	Iridium,		
270.	Hydraulic Limestone,			22.	Iridosmine,	.20	" 2.00
	v.,	.05	" .35	241.	Irite, r.,		
549.	Hydroapatite, r., . . .	.25	" 3.50	25.	Iron,	.25	" 8.00
462.	Hydrobiotite, r., . . .			241.	" Chromic, s.,	.05	" .35
710.	Hydroboracite,			237.	" Magnetic, s.,	.05	" 6.00
N.	Hydrobucholzite, . . .			25.	" Meteoric, v.,	.25	" 8.00
N.	Hydrocalcite,			85.	" Pyrites, s.,	.10	" 3.50
	Hydrocarbons. De-			25.	" Terrestrial, v., . . .	.25	" 8.00
	scribed at end of			233.	" Titaniferous, s., . .	.05	" .75
	Dana classification.			751.	" Vitriol, s.,	.15	" 2.00
310.	Hydrocastorite, r., . .			233.	Iserine, r.,		
292.	Hydrocerussite,			250.	Iserite, r.,		
298.	Hydroconite, r., . . .				Isinglass (Mica), . . .		
224.	Hydrocuprite, r., . . .	.10	" 1.00	626.	Isoclasite,		
724.	Hydrocyanite,			N.	Isopyre,		
302.	Hydrodolomite, r., . .	.10	" .75	210.	Itacolumyte, s. v., . .	.15	" 1.50
185.	Hydrofluorite, r., . . .			364.	Ittnerite, r.,		
269.	Hydrofranklinite, ap.,			371.	Ivaarite, r.,		
301.	Hydrogiobertite, . . .			458.	Ivigite, v.,	.10	" .75
166.	Hydrohalite, r.,			526A.	Ixiolite, r.,		
233.	Hydroilmenite, r., . .			H.	Ixolyte,		
300.	Hydromagnesite, . . .	.15	" 1.00				
457.	Hydronephelite, . . .	.25	" 1.25	240.	Jacobsite,	.25	" 2.00
N.	Hydroniccrite,			328.	Jadeite,	.25	" 4.00
212.	Hydrophane, v.,	.25	" 1.50	70.	Jaipurite, r.,		
174.	Hydrophilite,			42.	Jalpaite, r.,		
481.	Hydrophite, r.,	.50	" 1.50	130.	Jamesonite,	.25	" 3.50
269.	Hydroplumbite, ap., . .			394.	Jargon, v.,	1.00	" 4.00
335.	Hydrorhodonite, r., . .	.50	" 2.50	801.	Jarosite,	.25	" 2.00
N.	Hydrosamarskite, . . .			210.	Jasper, v.,	.10	" 1.00

210.	Jasperized Wood, v., \$	.10 to \$5.00	774.	Kornelite, r., . . . \$	\$
212.	Jasp-opal, v., . . .	.15 " .75	429.	Kornerupine, . . .	
H.	Jaulingite,		468.	Kotschubeite, v., .	.50 to 2.50
489.	Jefferisite,	.10 " 1.50	604.	Köttigite,	
325.	Jeffersonite, v., . .	.10 " 5.00	313.	Krablite, r.,	
370.	Jelletite, v.,	.25 " 1.00	233.	Kragerö Hematite, v.,	
211.	Jenzschite, r., . . .		H.	Krantzite,	.25 " 1.50
692.	Jeremejevite,		236.	Kreitononite, v., . .	.50 " 2.00
H.	Jet, v. Coal,	.10 " .75	198.	Kremersite,	
607.	Jogynaite, r.,		105.	Krennerite,	
806.	Johannite,	1.00 " 6.00	74.	Kreberite, r.,	
45.	Johnstonite, v., . . .		776.	Krohnkite,	.50 " 2.50
515.	Johnstrupite,	.25 " 2.50	762.	Krugite, r.,	
506.	Jollyte, r.,		429.	Kryptotil, r.,	
150.	Jordanite,	2.00 " 9.00	N.	Kulibinitite,	
32.	Josëite,	.50 " 2.00	504.	Kupferblau, r., . . .	
N.	Josephinite,		337.	Kupfferite, v., . . .	
727.	Jossaite, r.,		14.	Küstelite, v.,	
			N.	Kylindrite,	.50 " 1.50
338.	Kaersutite,		319.	Labradorite,	.10 " 2.50
730.	Kainite,	.25 " 1.50	702.	Lagonite,	
705.	Kaliborite, r.,		269.	Lampadite, r.,	
287.	Kaligine, r.,		805.	Lamprophanite, r., .	
764.	Kalinite,	.15 " .75	N.	Lamprostibian, . . .	
359.	Kaliophilite,		737.	Lanarkite,	1.00 " 4.00
360.	Kalk-cancrinite, r.,		270.	Landscape Marble,	
N.	Kallilite,		s., v.,	.50 " 3.00	
N.	Kamarezite,		419.	Långbanite,	.50 " 3.50
468A.	Kämmererite, v., . .	.25 " 1.50	779.	Langite,	.25 " 3.00
108.	Kaneite, ap.,		302.	Lansfordite,	
492.	Kaolin, s.,	.05 " .75	298.	Lanthanite,	.75 " 6.00
492.	Kaolinite,	.05 " .75	365.	Lapis-Lazuli, s., . .	.10 " 5.00
N.	Karamsinite,		703.	Larderellite,	
537.	Kârarfveite, r., . . .		549.	Lasurapatite, v., . .	
217.	Karelinite, r.,		320.	Latrobeite, v., . . .	
N.	Kauaiite,		446.	Laubanite,	
500.	Keffekillite, ap., . .		445.	Laumontite,	.25 " 4.00
N.	Kehoeite,		189.	Laurionite,	.35 " 3.00
511.	Keilhauite,	.25 " 1.50	94.	Laurite,	
420.	Kentrolite,	.50 " 2.00	N.	Lautarite,	
107.	Kermesite,	.50 " 2.50	158.	Lautite, r.,	
480.	Kerrite, r.,		596.	Lavendulan, r., . . .	.35 " 2.50
811.	Kerstenite, r.,		332.	Lavenite,	.50 " 2.50
233.	Kibdelophane, v., . .		325.	Lavrovite, v.,	
232.	Kidney Ore, v., . . .	.10 " 1.00	178.	Lawrencite,	1.00 " 3.00
498.	Kieselaluminite, r., .		N.	Lawsonite,	.25 " 10.00
744.	Kieserite,	.15 " 1.00	574.	Lazulite,	.25 " 2.00
154.	Kilbrickenite,	.75 " 2.50	313.	Lazurfeldspar, v., .	
458.	Killinite, r.,		365.	Lazurite,	.10 " 5.00
338.	Kirwanite, r.,		18.	Lead,	.50 " 5.00
284.	Kischtimite, r., . . .		734.	Leadhillite,	.50 " 5.00
553.	Kjerulfine, v.,	.15 " 2.50	742.	Lecontite,	
124.	Klaprotholite,		510.	Lederite, v.,	.10 " 1.00
471.	Klementite, r., . . .	.50 " 1.50	719.	Leedsite, r.,	
335.	Klipsteinite, r., . . .		313.	Leelite, v.,	.50 " 2.00
378.	Knebelite,	.50 " 1.50	50.	Lehrbachite,	1.00 " 3.00
N.	Knopite,		509.	Leidyite, ap.,	.15 " .75
785.	Knoxvillite,		480.	Lennilite, r.,	.10 " .50
131.	Kobellite,	.50 " 2.00	493.	Lenzinite, v.,	.25 " .75
523.	Kochelite, r.,		445.	Leonhardite, v., . .	.25 " 1.50
H.	Köflachite,		N.	Leonite,	
338.	Koksharovite, v., . .		257.	Lepidokrokite, s., . .	.10 " 3.00
17.	Kongsbergite, v., . .		460.	Lepidolite,	.05 " 4.00
614.	Koninckite,	.50 " 2.00	462B.	Lepidomelane,	.25 " 1.00
H.	Könlite,		458.	Lepidomorphite, v.,	
520A.	Koppite,	.25 " 1.50			

320.	Lepolite, v.,	\$	\$	35.	Macfarlanite, r., . .	\$	\$
509.	Lesleyite, ap., . . .			N.	Mackintoshite, . . .		
781.	Lettsomite, s., . . .	.50 to	3.00	480.	Maconite, r.,		
325.	Leucaugite, v., . . .			270.	Madreporic Marble,		
468.	Leuchtenbergite, v.,	.50 "	2.00	v.,	.10 to	.50	
321.	Leucite,	.10 "	3.00	271.	Magnesian Lime-		
631.	Leucochalcite, . . .	.50 "	2.00	stone, s.,	.05 "	.35	
435.	Leucocyclite, v., . .			233.	Magnesian Menacca-		
H.	Leucopetrite,			nite, v.,			
351.	Leucophanite, . . .	.25 "	1.50	238.	Magnesioferrite, . . .	.25 "	1.50
458.	Leucophyllite, v., .			272.	Magnesite,	.05 "	1.00
97.	Leucopyrite, v., . . .	.15 "	.50	237.	Magnetic Iron Ore,		
509.	Leucotile, ap., . . .			s.,	.05 "	6.00	
492.	Leverrierite, r., . .			20.	Magnetic Platinum,		
59.	Leviglianite, r., . . .			v.,			
449.	Levynite,	.25 "	1.50	74.	Magnetic Pyrites, s.,	.10 "	2.50
N.	Lewisite,			237.	Magnetite,	.05 "	6.00
562.	Libethenite,	.25 "	3.50	N.	Magnetostibian, . . .		
458.	Liebenerite, r., . . .	.15 "	1.00	241.	Magnochromite, v.,		
308.	Liebigite,	.25 "	1.50	810.	Magnolite, r.,		
417.	Lievrite, s.,	.25 "	2.00	288.	Malachite,	.10 "	4.00
H.	Lignite,	.10 "	.75	325.	Malacolite, v.,	.10 "	.50
510.	Ligurite, v.,			394.	Malacon, r.,	.05 "	.50
140.	Lillianite,	.50 "	3.00	752.	Mallardite,		
509.	Lillite, ap.,	.25 "	2.00	762.	Mamanite, r.,		
481.	Limbachite, r., . . .			549.	Manganapatite, v., .		
230.	Lime, r.,			262.	Manganbrucite, v., .		
288.	Lime-malachite, r.,			325.	Manganhedenberg-		
270.	Limestone, s., . . .	.05 "	.50	ite, v.,			
639.	Lime-wavellite, r.,			258.	Manganite,	.25 "	2.50
260.	Limnite, r.,			237.	Manganmagnetite,		
259.	Limonite,	.05 "	1.50	v.,			
741.	Linarite,	.50 "	7.50	270.	Manganocalcite, v.,		
681.	Lindackerite,			274.	Manganocalcite, v.,		
320.	Lindsayite, v.,			N.	Manganoferrite, . . .		
79.	Linnæite,	.50 "	3.00	462.	Manganophyllite, v.,	.25 "	2.00
654.	Liroconite,	.50 "	3.50	226.	Manganosite,	.75 "	3.00
644.	Liskeardite,	.25 "	1.50	583.	Manganostibiite, . . .		
460.	Lithia Mica, s., . . .	.05 "	4.00	330.	Manganpectolite, v.,	.25 "	3.50
N.	Lithidionite,	.75 "	2.00	270.	Marble, s.,	.05 "	.50
544.	Lithiophilite,	.50 "	2.00	96.	Marcasite,	.10 "	2.50
269.	Lithiophorite, r., . .			335.	Marceline, r.,		
270.	Lithographic Stone,	.05 "	.25	230.	Marcylite, r.,		
492.	Lithomarge, v., . . .	.15 "	.75	464.	Margarite,	.15 "	3.00
109.	Livingstonite,	.50 "	2.50	458.	Margarodite, v., . . .	.10 "	.75
237.	Lodestone, v.,	.10 "	2.00	389.	Marialite,		
338.	Loganite, r.,			N.	Mariposite,		
468A.	Loganite, v.,			338.	Marmairolite, v., . .		
97.	Löllingite,	.15 "	.50	58.	Marmatite, v.,	.25 "	.50
N.	Lorandite,	1.00 "	6.00	481.	Marmolite, v.,	.15 "	.75
N.	Lossenite,			N.	Marshite,		
325.	Lotallite, v.,			620.	Martinite,		
435.	Louisite, r.,			166.	Martinsite, r.,		
757.	Löweite,			232.	Martite, r.,	.10 "	1.50
802.	Löwigite,			714.	Mascagnite,	.50 "	2.00
313.	Loxoclase, v.,	.25 "	1.50	319.	Maskelynite, r., . . .		
480.	Lucasite, r.,			466.	Masonite, v.,	.10 "	.75
638.	Ludlamite,	.25 "	2.50	N.	Masrite,		
694.	Ludwigite,	.25 "	1.50	229.	Massicot,		
270.	Lumachelle, v., . . .	.25 "	2.00	120.	Matildite,		
682.	Lüneburgite,			186.	Matlockite,	.50 "	10.00
212.	Lussatite, r.,			376.	Matricite, r.,		
158.	Luzonite, r.,			N.	Mauzeilite,		
210.	Lydian Stone, s.v., .	.15 "	.50	651.	Mazapilite,	2.00 "	6.00
458.	Lythrodite, r.,			807.	Medjидite, r.,		

492.	Meerschalmunite, \$	\$	N.	Minervite,	\$	\$
	r.,		244.	Minium,	.50	to 3.00
485.	Meerschaum, s., . .	.10 to 1.25	743.	Mirabilite,	.25	" 1.50
386.	Meionite,	.25 " 2.00	682.	Miriqidite, ap., . .		
230.	Melaconite, v., . .	.25 " 1.50	735.	Misenite,		
544.	Melanchlor, r., . .		98.	Mispickel, s., . . .	.15	" 1.50
370.	Melanite, v., . . .	.25 " 2.50	668.	Mixite,	.25	" 2.50
348.	Melanocerite, . . .		388.	Mizzonite,	.25	" 1.50
479.	Melanolite, r., . .		210.	Mocha-Stone, s. v., .	.10	" 2.00
211.	Melanophlogite, r.,	.15 " 3.00	34.	Molybdenite, . . .	.15	" 20.00
506.	Melanosiderite, r.,		219.	Molybdic Ocher, s.,	.25	" 1.25
N.	Melanostibian, . .		219.	Molybdite,	.25	" 1.25
421.	Melanotekite, . . .	.50 " 2.00	811.	Molybdomenite, r.,		
193.	Melanothallite, r.,		181.	Molysite,		
751.	Melanterite,	.15 " 2.00	537.	Monazite,	.10	" 4.00
391.	Melilite,	.25 " 3.00	560.	Monetite,	.15	" 1.00
500.	Melinite, ap., . . .		539.	Monimolite,		
352.	Meliphanite, . . .	.25 " 2.50	325.	Monradite, r., . . .		
824.	Mellite,	.50 " 2.50	808.	Montanite,		
77.	Melonite,		374.	Monticellite,	.15	" 3.50
509.	Melopsite, ap., . .		496.	Montmorillonite, . .	.10	" .50
233.	Menaccanite, s., . .	.05 " .75	430.	Monzonite, ap., . .		
187.	Mendipite,	.50 " 2.00	315.	Moonstone, v., . . .	.25	" 3.00
766.	Mendozite,		316.	Moonstone, v., . . .	.25	" 2.00
151.	Meneghinite,	.35 " 5.00	437.	Mordenite,		
526A.	Mengite, r.,		750.	Morenosite,		
212.	Menilite, v.,	.25 " 1.50	423.	Moresnetite, r., . .	.50	" 2.00
58.	Mercurial Blende, v.,		N.	Morinite,		
16.	Mercury,	.25 " 2.00	516.	Mosandrite,	.25	" 2.00
462.	Merxene, v.,	.05 " 3.00	210.	Moss-Agate, v., . . .	.10	" 2.00
272A.	Mesitite,	.50 " 2.00	277.	Mossotite, v., . . .	.25	" 2.00
456.	Mesole, v.,	.25 " 1.00	567.	Mottramite, r., . . .		
449.	Mesolin, r.,		338.	Mountain Cork, v., .	.10	" 1.00
455.	Mesolite,	.25 " 2.50	338.	Mountain Leather,		
453.	Mesotype, s.,	.10 " 3.00	v.,		.10	" 1.00
593.	Messelite,		338.	Mountain Wood, v.,	.25	" .75
619.	Metabrushite, . . .		H.	Muckite,		
471.	Metachlorite, r., . .	.25 " 1.25	104.	Müllerine, r.,		
59.	Metacinnabarite, . .	.35 " 4.00	585.	Müllerite, r.,		
458.	Metasericite, v., . .		N.	Munkforsite,		
28.	Metastibnite, r., . .		313.	Murchisonite, v., . .		
797.	Metavoltine,		409.	Murmontite, r., . . .		
481.	Metaxoite, r.,		N.	Mursinkite,		
25.	Meteoritic Iron, v., .	.25 " 8.00	458.	Muscovite,	.05	" 3.00
25.	Meteoritic Stones, v.,	1.00 " 5.00	325.	Mussite, v.,	.10	" .50
270.	Mexican Onyx, v., .	.15 " 3.00	288.	Mysorin, r.,		
220.	Meymacite, r.,					
121.	Miargyrite,	1.50 " 3.00	672.	Nadorite,	.25	" 3.00
232.	Micaceous Iron Ore,		509.	Næsumite, ap., . . .		
v.,		.10 " .50	106.	Nagyagite,	.75	" 5.00
	Mica Group, 458-463.		270.	Nail-head Spar, v., .	.25	" 1.50
212.	Michaelite, v.,		269.	Namaqualite, ap., . .		
315.	Microcline,	.10 " 10.00	165.	Nantokite,	.25	" 1.00
522.	Microlite,	.25 " 5.00	H.	Napalite,		
361.	Microsommitite, . . .	.75 " 2.00	H.	Naphtha,		
H.	Middletonite,		H.	Naphthalene,		
550.	Miesite, v.,		H.	Native Humus Acid,		
320.	Mikrothin, r.,		453.	Natrolite,	.10	" 3.00
311.	Milarite,	.75 " 2.50	296.	Natron,	.25	" 1.50
212.	Milk-opal, v.,	.10 " 1.00	346.	Natron-catapleiite, v.,		
210.	Milky Quartz, v., . .	.05 " .50	545.	Natrophilite,		
70.	Millerite,	.25 " 3.00	560.	Natrophite, r., . . .		
500.	Miloschite, ap., . . .		48.	Naumannite,	.25	" 3.00
551.	Mimetite,	.25 " 3.50	313.	Necronite, v.,		
H.	Mineral Coal,	.05 " .25	453.	Needle Zeolite, s., .	.10	" 3.00

509.	Nefedieffite, ap., . . . \$	\$	561.	Olivenite,	\$.25 to \$5.00
H.	Neft-gil,		376.	Olivine, v.,	.05 " .50
262.	Nemalite, v.,		325.	Omphacite, v.,	.15 " 1.00
376.	Neochrysolite, r.,	.75 to 5.00	458.	Oncophyllite, v.,	
430.	Neociano, ap.,	1.00 " 3.00	458.	Oncosine, v.,	
509.	Neolite, ap.,		210.	Onegite, s. v.,	.50 " 3.00
509.	Neotocite,		61.	Onofrite,	
149.	Nepaulite, r.,		811.	Onofrite, r.,	
357.	Nephelite,	.10 " 3.00	387.	Ontariolite, v.,	
338.	Nephrite, v.,	.15 " .75	210.	Onyx, v.,	.15 " 2.50
N.	Neptunite,		270.	Onyx, Mexican, v.,	.15 " 3.00
295.	Nesquehonite,	.50 " 2.00	270.	Oölite, v. (v. 210),	.05 " .75
H.	Neudorite,		458.	Oosite, r.,	
497.	Neurolite, r.,		212.	Opal,	.10 " 6.00
22.	Nevyanskite, v.,		212.	Opal-agate, v.,	.15 " 2.50
621.	Newberyite,	.25 " 1.00	212.	Opalized Wood, v.,	.15 " 12.00
N.	Newboldite,		395.	Orangite, v.,	.25 " 5.00
494.	Newtonite,		500.	Oravitzite, ap.,	
N.	Niccochromite,		37.	Orileyite, r.,	
98.	Niccoliferous Arsenopyrite, v.,		619.	Ornithite, v.,	
25.	Niccoliferous Iron (Awaruite), v.,		27.	Orpiment,	.15 " 2.00
74.	Niccoliferous Pyrite, s.,	.10 " 2.50	409.	Orthite, s.,	.10 " 1.00
71.	Niccolite,	.25 " 3.00	313.	Orthoclase,	.05 " 3.50
N.	Nickel,		438.	Oryzite, r.,	
602.	Nickel Bloom, s.,	.25 " 2.50	64.	Osbornite, r.,	
90.	Nickel Glance, s.,	.50 " 3.50	330.	Osmelite, v.,	
237.	Nickel Oxide, r.,		22.	Osmiridium, s.,	.20 " 2.00
N.	Nickel-skutterudite,		549.	Osteolite, v.,	
509.	Nigrescite, ap.,		467.	Ottrelite,	.25 " 1.50
250.	Nigrine, v.,	.10 " 1.50	370.	Ouvarovite, s. v.,	.50 " 2.00
684.	Niter,		823.	Oxalate of Sodium and Ammonium, r.,	
687.	Nitrobarite,		585.	Oxammite, r.,	
685.	Nitrocalcite,		822.	Oxammite,	
690.	Nitroglauberite,		435.	Oxhaverite, v.,	
686.	Nitromagnesite,		456.	Ozarkite, v.,	.10 " 1.00
711.	Nivenite, v.,		H.	Ozocerite,	.10 " .75
195.	Nocerite,	.25 " 1.50	205.	Pachnolite,	.25 " 1.25
529.	Nohlite, r.,		97.	Pacite, r.,	
H.	Non-caking Coal,	.05 " .25	480.	Painterite, r.,	
505.	Nontronite, v.,		335.	Paisbergite, v.,	.15 " 5.00
338.	Noralite, v.,		N.	Palagonite,	
691.	Nordenskiöldine,		338.	Paligorskite, r.,	
338.	Nordenskiöldite, v.,		230.	Palladinite, r.,	
428.	Nordmarkite, v.,		23.	Palladium,	1.00 " 3.00
N.	Northupite,	.25 " 3.00	13.	Palladium Gold, v.,	
364.	Nosean, s.,	.50 " 1.50	704.	Pandermite, r.,	.15 " .75
364.	Noselite,	.50 " 1.50	787.	Paposite, r.,	
483A.	Noumeite, s.,	.10 " .75	233.	Paracolumbite, v.,	.05 " .35
550.	Nussierite, v.,		313.	Paradoxite, v.,	
387.	Nuttalite, v.,	.15 " 1.00	H.	Paraffin,	
500.	Ochran, ap.,		459.	Paragonite,	
674.	Ochrolite,		389.	Paralogite, r.,	
252.	Octahedrite,	.25 " 5.00	794.	Paraluminite,	
458.	Oellacherite, v.,		N.	Paramelaconite,	
394.	Oerstedite, r.,		271A.	Parankerite, s.,	
N.	Offrétite,	.15 " 1.50	N.	Parathorite,	
433.	Okenite,	.25 " 1.25	338.	Pargasite, v.,	.05 " 5.00
316.	Olafite, v.,	.50 " 1.50	284.	Parisite,	1.50 " 5.00
64.	Oldhamite,		N.	Paroligoclase,	
317.	Oligoclase,	.10 " 3.00	458.	Parophite, r.,	
273.	Oligonite, v.,		372.	Partschinite,	
			222.	Partzite, r.,	.15 " 1.00
			387.	Passauite, v.,	

211.	Passyite, r.,	\$	\$	407.	Picroepidote, r., . . .	\$	\$
789.	Pastreite, r.,			509.	Picrofluite, ap., . . .		
819.	Pateraite, r.,			481.	Picrolite, v.,	.10 to	.75
479.	Pattersonite, r., . . .			760.	Picromerite,		
H.	Peacock Coal, v., . . .	.05 to	.25	595.	Picrothomsonite, r., .		
N.	Pearceite,			325.	Picrophyll, r.,		
212.	Pearl Sinter, v., . . .			509.	Picrosmine, ap., . . .		
271.	Pearl Spar, v.,	.10	" 2.50	456.	Picrothomsonite, r., .		
324.	Peckhamite, r., . . .			337.	Piddingtonite, r., . . .		
330.	Pectolite,	.15	" 3.50	408.	Piedmontite,	.25	" 2.00
641.	Peganite,			824.	Pigotite, r.,		
269.	Pelagite, ap.,			509.	Pihlilite, ap.,		
N.	Pelagosite,			504.	Pilarite, v.,		
509.	Pelhamine, ap.,			509.	Pilinite, ap.,		
480.	Pelhamite, v.,			509.	Pilolite, ap.,		
270.	Pencatite, r.,			483A.	Pimelite, r.,		
N.	Penfieldite,			695.	Pinakiolite,	.25	" 3.00
468A.	Penninite,	.25	" 1.50	505.	Pinguite, v.,		
65.	Pentlandite,			458.	Pinitoid, r.,	.15	" .50
509.	Penwithite, r.,			705.	Pinnoite,		
192.	Percylite,			N.	Pirssonite,	.75	" 4.00
225.	Periclase,	.25	" 3.00	753.	Pisanite,	.25	" 1.50
316.	Periclone, v.,	.25	" 2.00	270.	Pisolite, v.,	.25	" 2.00
376.	Peridot, s.,	.05	" .50	794.	Pissophanite, r., . . .		
316.	Peristerite, v.,	.25	" 1.50	272A.	Pistomesite, v.,	.50	" 2.00
518.	Perovskite,	.50	" 4.00	711.	Pitchblende, s.,	.25	" 4.00
509.	Persbergite, ap.,	.50	" 1.50	325.	Pitkärantite, r., . . .		
313.	Perthite, r.,	.15	" 2.00	H.	Pittasphalt,		
310.	Petalite,	.15	" 2.50	678.	Pitticite,		
212.	Petrified Wood, v., . .			801.	Plagiocitrite, r., . . .		
210.	(Opalized and Jasperized),	.10	" 12.00	122.	Plagionite,	.50	" 3.00
H.	Petrolene,			108.	Plakodin, ap.,		
H.	Petroleum,	.05	" .25	611.	Planerite, r.,		
796.	Pettkoite, r.,	.50	" 3.00	210.	Plasma, v.,	.15	" .75
44.	Petzite,	.50	" 3.00	20.	Platinum,	.50	" 5.00
338.	Phaactinite, r.,			251.	Plattnerite,	.50	" 5.00
447.	Phacolite, v.,	.25	" 6.00	120.	Plenargyrite, r., . . .		
617.	Pharmacolite,	.50	" 2.50	234.	Pleonaste, s. v.,	.10	" 1.00
646.	Pharmacosiderite, . . .	.50	" 2.00	552.	Pleonectite, r.,	.75	" 3.00
324.	Phästine, r.,			582.	Pleurasite, r.,		
382.	Phenacite,	.10	" 3.50	500.	Plinthite, ap.,		
480.	Philadelphite, r., . . .			435.	Plombierite, r.,		
776.	Phillipite, r.,			2.	Plumbago, s.,	.10	" 1.50
441.	Phillipsite,	.25	" 4.00	498.	Plumbalophane, r., . .		
462A.	Phlogopite,	.05	" .75	229.	Plumbic Ocher, s., . . .		
726.	Phenicochroite,			270.	Plumbocalcite, v., . . .	.50	" 4.00
491.	Pholidolite,			241.	Plumboferrite, r., . . .		
286.	Phosgenite,	.25	" 7.50	658.	Plumbogummite,		
585.	Phosphammite, r., . . .			108.	Plumbomanganite, . .		
549.	Phosphatic Nodules, . .			ap.,			
	r.,	.05	" .25	108.	Plumbostannite, ap., .		
549.	Phosphorite, v.,	.05	" .25	458.	Plumose Mica, s. v., . .	.10	" 1.25
609.	Phosphosiderite,			249.	Polianite,	.25	" 1.00
664.	Phosphuranylite,			322.	Pollucite,	.50	" 3.00
335.	Photieite, r.,	.15	" 1.00	370.	Polyadelphite, v., . . .	.25	" 1.25
467.	Phyllite, v.,	.10	" .50	458.	Polyargyrite, r.,		
H.	Phylloretin,			157.	Polyargyrite,		
397.	Physalite, v.,			557.	Polyarsenite, v.,	.75	" 3.00
H.	Phytocollite,			156.	Polybasite,	.50	" 8.00
H.	Piauzite,			535.	Polycrase,	.50	" 2.00
648.	Picite, r.,			75.	Polydymite,	1.50	" 3.00
768.	Pickeringite,	.10	" 1.00	762.	Polyhalite,	.15	" .75
234.	Picotite, v.,			509.	Polyhydrite, ap.,		
768.	Picroallumogene, r., . .	.25	" 2.50	N.	Polylite,		
				461.	Polyolithionite, v., . . .		

533. Polymignite, \$.75 to \$3.50	267. Pyroaurite, \$.50 to \$1.50
550. Polysphærite, v., . . .	520. Pyrochlore,25 " 2.50
149. Polytelite, r.,	263. Pyrochroite,50 " 1.50
481. Porcellophite, v., . . .15 " .50	509. Pyroidesine, ap., . . .
13. Porpezite, v.,	254. Pyrolusite,05 " 2.50
500. Portite, ap.,	510. Pyromelane, r.,
H. Posepnyte,	550. Pyromorphite,15 " 5.00
764. Potash Alum, s., . . .15 " .75	370. Pyrope, v.,10 " 2.00
458. Potash Mica, s., . . .05 " 3.00	N. Pyrophanite,
484. Potstone, v.,05 " .35	586. Pyrophosphorite, r., . .
816. Powellite,	497. Pyrophyllite,10 " .75
210. Prase, v.,15 " .50	H. Pyropissite,15 " .75
479. Prasilite, r.,	H. Pyroretinite,
212. Precious Opal, v., . . .25 " 6.00	409. Pyrorthite, v.,
270. Predazzite, r.,25 " 1.00	480. Pyrosclerite, r., . . .
411. Prehnite,15 " 2.50	385. Pyrosmalite,35 " 7.50
411. Prehnitoid, r.,	146. Pyrostilpnite,1.50 " 3.50
388. Prehnitoid, v.,	325. Pyroxene,05 " 7.50
58. Pribramite, v.,	522. Pyrrhite, r.,
704. Priceite, r.,15 " .75	74. Pyrrhotite,10 " 2.50
429. Prismatine, r.,	210. Quartz,05 " 5.00
469. Prochlorite,05 " 1.00	773. Quenstedtite,
185. Proidonite, r.,	804. Quetenite,
204. Prosopite,	16. Quicksilver, s.,25 " 2.00
325. Protheite, v.,	509. Quincite, ap.,
461. Protolithionite, r., . .	N. Quirogite,
505. Protonontrolite, r., . .	269. Rabdionite, ap., . . .
480. Protovermiculite, r., .10 " .75	461. Rabenglimmer, v., . . .25 " 2.00
145. Proustite,50 " 5.00	96. Radiated Pyrites, v., . .50 " 1.50
549. Pseudoapatite, v., . .	210. " Quartz, v.,25 " .75
538. Pseudoberzelite, r., . .75 " 3.00	453. Radiolite, v.,
462. Pseudobiotite, r., . . .	789. Raimondite,
246. Pseudobrookite, . . .75 " 1.50	208. Ralstonite,50 " 5.00
180. Pseudocotunnite, r., . .	100. Rammelsbergite, . . .50 " 2.00
570. Pseudomalachite, . . .25 " 2.50	430. Ramosite, ap.,
437. Pseudonatrolite, . . .	212. Randannite, v.,
195. Pseudonocerina, r., . .	309. Randite, r.,25 " 1.25
468A. Pseudophite, v., . . .	457. Ranite, v.,
389. Pseudo-Scapolite, r., .	N. Ransatite,
344. Pseudosmaragd, r., . . .	338. Raphilite, v.,
543. Pseudotriplite, r., . .1.00 " 3.00	232. Raphisiderite, r., . . .
269. Psilomelane,05 " 1.50	462. Rastolyte, r.,
567. Psittacinite,1.00 " 3.00	N. Rathite,
342. Pterolite, r.,	496. Razoumovskyn, r., . . .25 " 1.00
462B. Pterolite, r.,	26. Realgar,25 " 3.50
436. Ptilolite,25 " 2.50	492. Rectorite, r.,25 " 1.00
542. Pucherite,75 " 5.00	594. Reddingite,
270. Pudding-stone, v., . .	785. Redingtonite, r., . . .
(Also v. of 210), . . .10 " 1.25	232. Red Iron Ore, s.,05 " 4.00
78. Purple Copper Ore, . . .15 " 2.00	232. " Ocher, v.,05 " .35
397. Pycnite, v.,25 " 2.50	585. Redondite, r.,
458. Pycnophyllite, v., . . .	212. Red-opal, v.,10 " .75
509. Pyknotrop, ap.,	54. Redruthite, s.,15 " 6.00
325. Pyralloite, r.,	483A. Refdanskite, r., . . .
484. Pyralloite, v.,	H. Refikite,
144. Pyrargyrite,50 " 7.00	162. Regnolite, r.,
85. Pyrite,10 " 3.50	270. Reichite, v.,
98. Pyrites, Arsenical, s., .15 " 1.50	819. Reinite,
96. " Cockscomb, s., . . .10 " 1.50	304. Remingtonite,50 " 5.00
83. " Copper, s.,10 " 3.00	484. Rensselaerite, v., . . .05 " .35
85. " Iron, s.,10 " 3.50	N. Resanite,
74. " Magnetic, s.,10 " 2.50	212. Resin-opal, v.,10 " 1.00
96. " Radiated, v.,10 " 1.50	509. Restormelite, ap., . . .
84. " Tin, s.,15 " 2.50	

481.	Retinalite, v.,	\$	\$	H.	Rumänite,	\$	\$
H.	Retinellite,			479.	Rumpfte,		
H.	Retinite,	.10	to 1.00	523.	Rutherfordite, r., .		
H.	Reussinite,			250.	Rutilated Quartz, v.,	.25	to 9.00
113.	Rezbanyite,			250.	Rutile,	.10	" 9.00
25.	Rhabdite, r.,			99.	Safflorite,	.25	" 2.50
605.	Rhabdophanite, . . .	.10	" 1.00	168.	Sal-Ammoniac, . . .	.25	" 2.50
667.	Rhagite,			325.	Salite, v.,	.15	" 1.00
500.	Rhodalite, ap., . . .			466.	Salmite, v.,		
N.	Rhodarsenian,			166.	Salt, s.,	.10	" 1.50
13.	Rhodite, v.,			684.	Saltpeter, s.,		
699.	Rhodizite,			N.	Salvadorite,		
468A.	Rhodochrome, v., . .	.25	" 2.00	529.	Samarskite,	.25	" 2.50
274.	Rhodochrosite, . . .	.15	" 5.00	498.	Samoite, r.,		
335.	Rhodonite,	.10	" 10.00	149.	Sandbergerite, v., .		
N.	Rhodophosphate, . .			210.	Sandstone, v.,	.05	" .25
210.	Riband Jasper, v., .	.25	" 1.00	210.	" Flexible, v., . . .	.15	" 1.50
653.	Richellite, r.,	.50	" 1.50	N.	Sanguinite,		
155.	Richmondite, r., . . .			313.	Sanidine, v.,	.25	" 1.00
264.	" r.,			488.	Saponite,	.10	" .50
338.	Richterite, v.,	.25	" 2.50	231.	Sapphire, v.,	.25	" 3.00
340.	Riebeckite,			210.	Sapphire-Quartz, v.,	.25	" 1.00
517.	Rinkite,			430.	Sapphirine,	.50	" 3.00
149.	Rionite, v.,			N.	Sarawakite,		
468.	Ripidolite, s.,	.10	" 3.50	390.	Sarcolite,	.25	" 2.00
388.	Riponite, v.,			555.	Sarcopsidite, r., . . .		
147.	Rittingerite,	3.00	" 5.00	210.	Sard, v.,	.10	" .50
222.	Rivotite, r.,			210.	Sardonyx, v.,	.15	" 1.00
H.	Rochlederite,			557.	Sarkinite,	.50	" 2.50
210.	Rock Crystal, v., . .	.05	" 5.00	115.	Sartorite,		
746.	Rock-gypsum, v., . .	.05	" .25	457.	Sasbachite, ap., . . .		
270.	Rock-meal, v.,	.10	" .50	265.	Sassolite,	.35	" 1.50
270.	Rock-milk, s. v., . . .	.05	" .35	270.	Satin Spar, v.,	.15	" .75
166.	Rock Salt, s.,	.10	" 1.50	746.	Satin Spar, v.,	.10	" 1.25
N.	Roebbingite,			406.	Saundersite, r., . . .	.15	" 1.00
379A.	Roepperite,	.50	" 2.50	179.	Scacchite,		
535.	Rogersite, ap.,	.25	" 1.50	387.	Scapolite, s.,	.10	" 4.00
671.	Romeite,			500.	Scarbroite, r.,		
778.	Römerite,	.25	" 2.00	129.	Schapbachite,		
463.	Roscoelite,	.50	" 7.50	814.	Scheelite,	.25	" 3.00
480.	Roseite, r.,	.15	" 1.50	H.	Scheererite,		
590.	Roselite,	.75	" 4.00	325.	Schefferite, v.,	.25	" 2.00
331.	Rosenbuschite, . . .	.25	" 2.00	324.	Schiller Spar, r., . .		
210.	Rose Quartz, v., . . .	.10	" 2.00	125.	Schirmerite,		
458.	Rosite, r.,			669.	Schneebergite, r., .		
622.	Rösslerite, r.,			445.	Schneiderite, v., . .		
344.	Rosterite, r.,			719.	Schoarite, v.,		
H.	Rosthornite,			426.	Schorl, s.,	.05	" 10.00
370.	Rothoffite, v.,	.50	" 1.00	371.	Schorlomite,	.15	" 1.50
483.	Röttisite, r.,	.10	" .75	H.	Schraufite,	.25	" 1.25
N.	Roumanite,			25.	Schreibersite, r., . .		
N.	Rowlandite,			309.	Schröckingerite, r.,		
462.	Rubellan, r.,	.50	" 2.50	500.	Schrötterite,	.50	" 1.50
426.	Rubellite, v.,	.05	" 4.00	2.	Schungite, r.,		
509.	Rubislite, ap.,			188.	Schwartzembergite, .	.50	" 2.50
783.	Rubrite, r.,			148.	Schwartzite, v.,		
231.	Ruby, v.,	.25	" 4.00	H.	Scleretinite,		
234.	" Balas, s. v.,	.25	" 3.00	454.	Scolecite,	.25	" 5.00
58.	" Blende, v.,	.15	" 3.00	607.	Scorodite,	.25	" 2.50
224.	" Copper, s.,	.10	" 7.50	407.	Scorza, v.,		
145.	" Silver, s. 144,			506.	Scotiolite, v.,		
	145,	.50	" 5.00	456.	Scoulerite, v.,		
234.	" Spinel, v.,	.25	" 3.00	605.	Scovillite, v.,	.10	" 1.00
58.	" Zinc, s.,	.15	" 3.00	447.	Seebachite, v.,	.25	" 4.00
270.	Ruin Marble, v., . . .	.50	" 3.00				

309.	Selbite, r.,	\$	\$	683.	Soda Niter,	\$	.10 to \$.75
118.	Seleniferous Galeno- bismutite, v.,			459.	Sodium Mica, s., . . .		
746.	Selenite, v.,	.05 to	4.00	90.	Sommarugaite, r., . .		
5.	Selenium,			768.	Sonomaite, r.,		
218.	Selenolite, r.,			487.	Spadaite,		
4.	Selensulphur,	.25	" 4.00	441.	Spangite, r.,		
6.	Selen-Tellurium, . . .			732.	Spangolite,		
177.	Sellaite,	4.00	" 10.00	273.	Spathic Iron, s., . . .	.05	" 3.00
500.	Selwynite, ap.,			96.	Spear Pyrites, v., . . .	.50	" 2.50
212.	Semi-Opal, v.,	.10	" 3.00	232.	Specular Iron, s., . .	.05	" 4.00
133.	Semseyite,			93.	Sperryite,	.50	" 2.00
214.	Senarmontite,	.25	" 5.00	370.	Spessartite, v., . . .	.10	" 2.00
485.	Sepiolite,	.10	" 1.25	643.	Sphærite,		
458.	Sericite, v.,	.10	" .75	276.	Sphærocobaltite, . . .	.50	" 7.50
481.	Serpentine,	.05	" 2.00	273.	Sphærosiderite, v., . .		
481.	" Marble, v.,	.15	" 2.00	443.	Sphærostilbite, v., . .	.25	" 3.00
782.	Serpierite,	.50	" 5.00	58.	Sphalerite,	.10	" 3.00
H.	Settling Stones Re- sin,			510.	Sphene, s.,	.10	" 7.50
465.	Seybertite,	.15	" 2.00	430.	Sphenoclase, ap., . .		
270.	Shell-Marble, v., . . .	.25	" 1.00	500.	Sphragidite, ap., . .		
273.	Siderite,	.05	" 3.00	234.	Spinel,	.10	" 5.00
25.	Siderites (Meteorite), v.,	.25	" 8.00	510.	Spinthere, v.,		
273.	Siderodot, v.,			554.	Spodiosite,		
25.	Siderolites, v.,	1.50	" 10.00	327.	Spodumene,	.10	" 3.50
799.	Sideronatrium,	.50	" 3.00	549.	Staffelite, v.,	.25	" 2.00
462.	Siderophyllite, v., . .	.25	" 2.00	270.	Stalactite, v.,	.15	" 3.00
273.	Sideroplesite, v., . . .			270.	Stalagmite, v.,	.10	" 3.00
H.	Siegburgite,	.25	" 1.50	H.	Stannite,		
79.	Siegenite, v.,	.50	" 3.00	58.	Stanniferous Blende, v.,		
270.	Siena Marble, v., . . .	.10	" .50	84.	Stannite,	.15	" 2.50
320.	Sigterite, r.,			462A.	Star Mica, s.,	.05	" .75
30.	Silaonite, r.,			210.	Star Quartz (Asteri- ated), v.,		
338.	Silfbergite, v.,			231.	Star Sapphire, v., . . .	.50	" 3.00
210.	Siliceous Sinter, v., . .			698.	Stassfurtite, s., . . .	.25	" 2.00
210.	Silicified Wood, v., . .			428.	Staurolite,	.10	" 1.50
	(also v., 212),	.10	" 12.00	479.	Steatargillite, r., . . .		
399.	Sillimanite,	.10	" .75	484.	Steatite, s.,	.05	" .35
14.	Silver,	.25	" 7.50	437.	Steeleite, r.,		
153.	" Brittle, s.,	.25	" 6.00	349.	Steenstrupine, r., . .		
144.	" Dark Ruby, s., . . .	.50	" 7.00	45.	Steinmannite, v., . . .		
42.	" Glance, s.,	.25	" 8.00	N.	Stellarite,		
169.	" Horn, s.,	.25	" 4.00	153.	Stephanite,	.25	" 6.00
145.	" Light Ruby, s., . . .	.50	" 5.00	615.	Stercorite,		
H.	Simetite,	.50	" 2.00	458.	Sterlingite, v.,		
500.	Sinopite, ap.,			56.	Sternbergite,	1.00	" 2.50
524.	Sipyrite,	1.00	" 5.00	222.	Stetefeldtite, r., . . .		
22.	Siserskite, v.,			222.	Stibianite, r.,		
466.	Sismondine, v.,			583.	Stibiatil, r.,		
N.	Sjogruvite,			222.	Stibiconite,	.15	" 1.00
526A.	Skogbölite,	.50	" 2.00	222.	Stibioferrite, r., . . .		
95.	Skutterudite,	.75	" 2.00	N.	Stibiotantalite,		
457.	Sloanite, ap.,			28.	Stibnite,	.15	" 10.00
87.	Smaltite,	.25	" 3.00	210.	Stibnite in Quartz, v.,		
338.	Smaragdite, v.,	.25	" 1.50	443.	Stilbite,	.10	" 3.00
500.	Smectite, ap.,			474.	Stilpnomelane,	.15	" 1.25
493.	Smectite, v.,			719.	Stinkstone, v.,	.10	" .50
275.	Smithsonite,	.10	" 5.00	270.	Stinkstone, v.,		
210.	Smoky Quartz, v., . . .	.05	" 3.00	496.	Stolpenite, v.,		
N.	Snarumite,			817.	Stolzite,	.75	" 3.00
484.	Soapstone, s.,	.05	" .35	325.	Strakonitzite, r., . . .		
316.	Soda Feldspar, s., . . .	.05	" 3.00	335.	Stratopeite, r.,		
362.	Sodalite,	.25	" 3.00	248.	Stream Tin, v.,	.10	" .50

608.	Strengite,	\$.25 to \$1.50	748.	Tauriscite, r.,	\$. . . \$
475.	Strigovite,		575.	Tavistockite,	
389.	Stroganovite, r., . . .		715.	Taylorite,	
55.	Stromeyerite,	1.00 " 3.00	675.	Taznite, r.,	
280.	Strontianite,	.10 " 3.00	750.	Tecticite, r.,	
270.	Strontianocalcite, v.,		N.	Telaspyrine,	
585.	Struvite,		31.	Telluric Bismuth, s.,	.25 to 3.00
509.	Stübelite, ap.,		218.	Tellurite,	.75 " 2.00
41.	Stützite,		7.	Tellurium,	.25 " 3.00
768.	Stüvenite, r.,		305.	Tengerite,	.50 " 2.50
141.	Stylotypite,		149.	Tennantite,	.35 " 5.00
478.	Subdelessite, r., . . .		230.	Tenorite,	.25 " 3.50
H.	Succinellite,		379.	Tephroite,	.15 " 5.00
H.	Succinite,	.25 " 3.00	381.	Tephrowillemite, v.,	
498.	Sulfatellophan, r., . .		N.	Tequezquite,	
N.	Sulfoborite,	.75 " 3.00	500.	Teratolite, ap.,	
211.	Sulfuricin, r.,		389.	Terenite, r.,	
728.	Sulphohalite,	5.00 " 7.50	25.	Terrestrial Iron,	.25 " 8.00
3.	Sulphur,	.15 " 20.00	287.	Teschemacherite, . . .	
31.	Sulphurous Tetradymite, v.,	.25 " 3.00	435.	Tesselite, v.,	
N.	Sundtite,		31.	Tetradymite,	.25 " 3.00
317.	Sunstone, s., v., . . .	.25 " 3.00	N.	Tetragophosphite, . . .	
734.	Susannite, r.,		148.	Tetrahedrite,	.15 " 5.00
693.	Sussexite,	.25 " 2.00	337.	Thalackerite, v., . . .	
N.	Svabite,	.25 " 3.00	502.	Thaumasite,	.15 " 2.50
679.	Svanbergite,	.50 " 5.00	716.	Thenardite,	.10 " 4.00
N.	Sychnodymite,		294.	Thermonatrite,	
104.	Sylvanite,	.75 " 7.50	481.	Thermophyllite, v.,	
167.	Sylvite,	.10 " 1.25	821.	Thierschite, r., . . .	
598.	Synplesite,	.50 " 2.00	270.	Thinolite, r.,	.10 " .75
579.	Synadelphite,	.75 " 3.00	273.	Thomäite, r.,	
756.	Syngenite,	.25 " 3.00	206.	Thomsenolite,	.25 " 4.00
338.	Syntagmatite, v., . . .		456.	Thomsonite,	.10 " 2.00
324.	Szaboite, v.,		395.	Thorite,	.25 " 10.00
697.	Szabelyite,	.50 " 2.50	712.	Thorogummite, r., . . .	.50 " 2.50
745.	Szmikite,		N.	Thrombolite,	
212.	Tabasheer, r.,		406.	Thulite, v.,	.15 " 1.50
468A.	Tabergite, r.,		473.	Thuringite,	.10 " .75
210.	Tabular Quartz, v.,	.25 " 1.00	60.	Tiemannite,	.25 " 3.00
329.	" Spar, s.,	.10 " 4.00	210.	Tiger-eye, v.,	.10 " 3.00
202.	Tachhydrite,	.15 " .50	N.	Tilasite,	
394.	Tachyaphaltite, r., . .		224.	Tile Ore, v.,	
630.	Tagilite,		47.	Tilkerodite, r.,	
484.	Talc,	.05 " .35	19.	Tin,	
549.	Talc-apatite, r.,		707.	Tincalconite, r.,	
479.	Talc-chlorite, r., . . .		84.	Tin Pyrites, s.,	.15 " 2.50
458.	Talcite, v.,		248.	Tin Stone, s.,	.10 " 2.50
484.	Talcoid, r.,		233.	Titanic Iron, s.,	.05 " .75
509.	Talcosite, ap.,		510.	Titanite,	.10 " 7.50
555.	Talktriplite, v.,		376.	Titan-olivine, r., . . .	
193.	Tallingite, r.,	1.00 " 2.50	510.	Titanomorphite, v., . . .	
767.	Tamarugite,		248.	Toad's-Eye Tin, v., . . .	.10 " 2.50
N.	Tammite,		435.	Tobermorite, r.,	
320.	Tankite, v.,		173.	Tocornalite, r.,	
217.	Tantalie Ocher, r., . . .		90.	Tombazite, r.,	
526.	Tantalite,	.15 " 3.00	397.	Topaz,	.05 " 15.00
143.	Tapalpite,		370.	Topazolite, v.,	.50 " 2.00
527.	Tapiolite,		H.	Torbanite,	.25 " 1.00
645.	Taranakite, r.,		659.	Torbernite,	.25 " 3.50
727.	Tarapacaite, r.,		481.	Totaigite, r.,	
45.	Targionite, v.,		210.	Touchstone, v.,	.15 " .50
277.	Tarnowitzite, v.,	.50 " 1.50	426.	Tourmaline,	.05 " 10.00
H.	Tasmanite,	.15 " .75	269.	Transvaalite, ap., . . .	
			370.	Trautwinite, r.,	
			325.	Traversellite, v.,	.10 " .75

ALPHABETICAL INDEX AND PRICE LIST.

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270.	Travertine, v., . . .	\$.10 to \$.75	78.	Variegated Copper \$	\$
2.	Tremenheerite, r., .			Ore, s.,	.15 to 2.00
338.	Tremolite, v.,	.10 " 2.00	611.	Variscite,	.15 " 4.00
596.	Trichalcite,		269.	Varvicite, r.,	
211.	Tridymite,	.25 " 2.00	727.	Vauquelinite,	1.00 " 3.50
380.	Trimerite,		467.	Venasquite, v.,	
H.	Trinkerite,		509.	Venerite, ap.,	
543.	Triphylite,	.15 " 2.00	481.	Verd-Antique, v., . .	.15 " 2.00
555.	Triplite,	.25 " 1.50	270.	Verd-Antique Mar-	
556.	Triploidite,	.25 " 1.50		ble, v.,	
212.	Tripoli Slate, v., . .		480.	Vermiculite, r., . . .	.10 " .75
212.	Tripolite, v.,	.05 " .35		Vermiculites, fol-	
675.	Trippkeite,			lowing 480.	
350.	Tritomite,	.50 " 2.00	N.	Vesbine,	.25 " 1.50
665.	Trögerite,	.50 " 2.50	211.	Vestan, r.,	
73.	Troilite,	1.00 " 3.00	393.	Vesuvianite,	.10 " 3.00
645.	Trolleite, r.,		637.	Veszelyite,	
299.	Trona,	.25 " 1.50	323.	Victorite, v.,	
381.	Troostite, v.,	.10 " 7.50	529.	Vietinghofite, r., . .	
513.	Tscheffkinite,	.25 " 2.50	376.	Villarsite, r.,	
316.	Tschemmakite, v., . .		325.	Violan, v.,	.25 " 1.00
765.	Tschemmigite,	.15 " .75	479.	Viridite, r.,	
492.	Tuesite, v.,		755.	Vitriol, Blue, s., . . .	.10 " 1.50
270.	Tufa, Calc v.,	.05 " .50	597.	Vivianite,	.15 " 4.00
220.	Tungstite,		807.	Voglianite, r.,	
255.	Turgite,	.10 " .50	309.	Voglite,	1.50 " 3.50
642.	Turquoise,	.15 " 3.00	462.	Voigtite, r.,	
635.	Tyrolite,	.25 " 1.50	633.	Volborthite,	
182.	Tysonite,	.50 " 4.00	222.	Volgerite, r.,	
			796.	Voltaite,	
233.	Uddevallite, v., . . .		108.	Voltzite,	
411.	Uigite, r.,		722.	Vulpinite, v.,	
H.	Uintahite,	.15 " .75			
708.	Ulexite,	.15 " 1.50	269.	Wad, r.,	.10 " 1.50
92.	Ullmannite,	.35 " 5.00	423.	Wagite, v.,	
N.	Umangite,		553.	Wagnerite,	.15 " 2.50
807.	Uraconite, r.,	.25 " 3.00	H.	Walchowite,	
325.	Uralite, r.,		338.	Waldheimite, r., . . .	
338.	Uralite, v.,		330.	Walkerite, v.,	
409.	Uralorthite, v., . . .		666.	Walpurgite,	.35 " 1.50
711.	Uraninite,	.25 " 4.00	306.	Walthérite, r.,	
711.	Uranniobite, v., . . .		465A.	Waluwite, v.,	
807.	Uranochalcite, r., . .		622.	Wapplerite,	.25 " 1.50
663.	Uranocircite,	.50 " 2.50	N.	Wardite,	.75 " 3.00
503.	Uranophane,	.50 " 2.00	740.	Waringtonite, v., . . .	
807.	Uranopilite,		126.	Warrenite,	
713.	Uranosphærite,		700.	Warwickite,	.15 " 1.00
662.	Uranospinite,		233.	Washingtonite, v., . .	.15 " .75
307.	Uranothallite,	.50 " 2.00	409.	Wasite, r.,	
395.	Uranothorite, v., . . .		223.	Water,	
503.	Uranotil, s.,	.50 " 2.00	763.	Wattevillite,	
H.	Urpethite,		639.	Wavellite,	.10 " 2.00
786.	Utahite,	.25 " .75	N.	Webnerite,	
370.	Uvarovite, v.,	.50 " 2.00	33.	Wehrlite,	
			285.	Weibyeite, r.,	
480.	Vaalite, r.,	.25 " 1.00	313.	Weissigite, v.,	
N.	Valaite,		N.	Wellsite,	
216.	Valentinite,	.25 " 2.00	387.	Wernerite,	.10 " 4.00
N.	Valleite,	.50 " 2.50	791.	Werthemanite, r., . . .	
108.	Valleriite, ap.,	.50 " 1.00	399.	Westanite, r.,	
217.	Vanadic Ocher, r., . .		N.	Whartonite,	
552.	Vanadinite,	.25 " 9.00	H.	Wheelerite,	
567.	Vanadiolite, r., . . .		136.	Wheel Ore, s.,	.35 " 3.50
463.	Vanadium Mica, s., . .	.50 " 7.50	821.	Whewellite,	2.00 " 6.00
423.	Vanuxemite, r., . . .	.25 " 1.50	216.	White Antimony, s., . .	.25 " 2.00

213.	White Arsenic, s., . \$	\$	N.	Xiphonite, \$	\$
281.	White Lead Ore, s., .10	to 6.00	435.	Xonotlite, r.,	.50 to 2.50
458.	White Mica, s.,	.05 " 3.00	435.	Xylochlore, v.,	
96.	White Pyrites, s.,	.10 " 2.50	H.	Xyloretinite,	
39.	Whitneyite,		509.	Xylotile, ap.,	
567.	Wicklowite, r.,				
480.	Willcoxite, r.,		259.	Yellow Ochre, v.,	.05 " .35
381.	Willemite,10	" 7.50	108.	Youngite, ap.,	
481.	Williamsite, v.,10	" 1.50	370.	Yttergarnerite, v.,	
N.	Willyamite,		405.	Yttrialite,	.50 " 3.00
389.	Wilsonite, r.,25	" 1.50	209.	Yttrocerite,	
458.	Wilsonite, r.,		712.	Yttrogummite, r.,	
370.	Wiluite, v.,50	" 1.50	528.	Yttrotantalite,	.25 " 2.00
791.	Winebergite, r.,				
269.	Winklerite, ap.,		303.	Zaratite,	.25 " 1.50
701.	Winkworthite, r.,25	" 1.50		Zeolites, 436-457.	
407.	Withamite, v.,50	" 2.50	613.	Zepharovichite,	.50 " 2.00
279.	Witherite,10	" 6.00	619.	Zeugite, v.,	
137.	Wittichenite,1.00	" 2.50	660.	Zeunerite,	.50 " 2.00
333.	Wöhlerite,50	" 3.00	426.	Zeuxite, r.,	
500.	Wolchonskoite, ap.,		H.	Zietrisikite,	
103.	Wolfachite,		173.	Zimapanite, r.,	
812.	Wolfram, s.,10	" 2.00	12.	Zinc,	
812.	Wolframite,10	" 2.00	805.	Zincaluminite,	
329.	Wollastonite,10	" 4.00	58.	Zinc Blende, s.,	.10 " 2.00
H.	Wollongongite,10	" .50	228.	Zincite,	.10 " 1.50
212.	Wood-Opal, v.,15	" 12.00	270.	Zincocalcite, v.,	
	Wood, Silicified (Pet-		236.	Zinc-Spinel, s.,	.25 " 6.00
	rified), v., 210, 212,	.10 " 12.00	749.	Zinc Vitriol, s.,	.50 " 2.50
248.	Wood Tin, v.,10	" 2.50	289.	Zinkazurite, r.,	
779.	Woodwardite, r.,25	" 2.00	114.	Zinkenite,	.50 " 3.00
399.	Wörthite, v.,		723.	Zinkosite,	
818.	Wulfenite,10	" 5.00	461.	Zinnwaldite,	.25 " 2.50
H.	Wurtzilite,25	" 1.00	807.	Zippeite, r.,	
69.	Wurtzite,25	" 1.25	N.	Zircarbite,	
			394.	Zircon,	.10 " 12.50
572.	Xantharsenite, r.,		N.	Zirkelite,	
160.	Xanthoconite,50	" 4.00	264.	Zirlite, r.,	
428.	Xantholite, v.,		481.	Zöblitzite, r.,	
465A.	Xanthophyllite,		406.	Zoisite,	.10 " 3.00
409.	Xanthorhite, v.,		457.	Zonochlorite, ap.,	.50 " 3.00
260.	Xanthosiderite,25	" 1.50	52.	Zorgite,	.50 " 2.00
784.	Xanthosiderite, s.,25	" 2.00	369.	Zunyite,	.25 " 1.50
399.	Xenolite, v.,		555.	Zwieselite, v.,	
536.	Xenotime,25	" 10.00	316.	Zygadite, v.,	.50 " 2.00

